a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

SEPTEMBER, 1958

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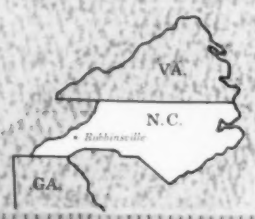
4

NEW SOUTHERN FACTORIES INCREASE EFFICIENCY FOR JAMES LEES & SONS COMPANY

The new Fontana Mills, Inc., plant shown above weaves Lees wilton and velvet carpets. The plant is one of three built in the South by Lees since it began concentration of production in this desirable new industrial area.

Robert and Company Associates—which has been serving the great names in the textile field for more than 40 years—designed and supervised construction of these plants for Lees.

Let us discuss your plant needs with you. We provide a complete service, including site selection, preliminary sketches, cost estimates, building design, the securing of bids from qualified contractors, and supervision to completion and owner acceptance.



ROBERT AND COMPANY ASSOCIATES
Textile Engineering Division
ATLANTA

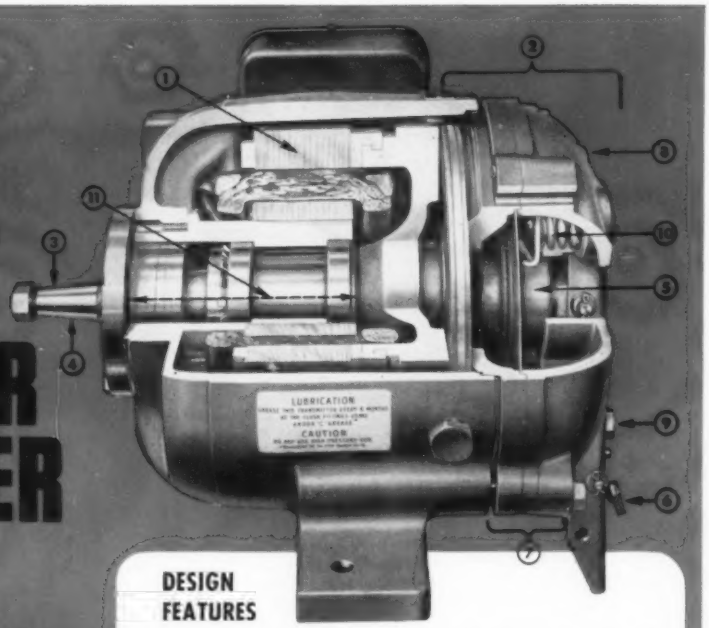
NEXT ISSUE: Preview of the Greenville Show

THE DEPENDABLE DIEHL

"BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

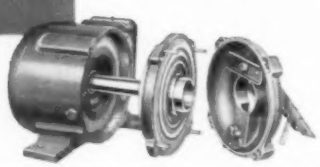


DESIGN FEATURES

*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)

CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

The original and only loom power transmitter . . . plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

plus these outstanding Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

** Exclusive feature—patent protected.*

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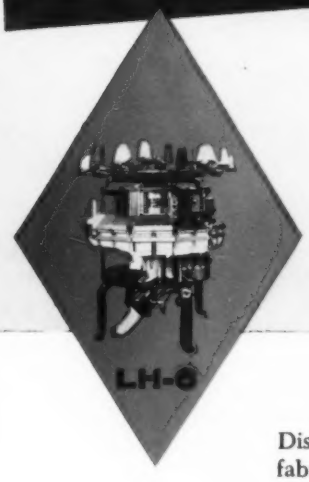

"Knitted Outerwear" . . . from the Wildman Jacquard LH-6

Discriminating people who want both style and quality in a sweater, daily choose knitted fabrics from this versatile machine • The LH-6 will knit plain jersey . . . links and links . . . cross links and links . . . half cardigan . . . 2 or 3 color Jacquard designs . . . self pattern designs – with 2 x 2 or 1 x 1 cuff • For complete technical data, write for bulletin LH-6.

All day long . . . sweaters belong

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BLEACHING

"We dyed ½-million yards this week . . . with no rejects!"

So says a new user of a Becco Silicate-Free Bleaching Process who previously suffered up to 25% rejects.

When complex silicates of calcium and magnesium formed scale on equipment and left resistant residues in the cloth, Becco's recommendation for Silicate-Free Hydrogen Peroxide bleaching solutions eliminated dye house troubles.

This doesn't mean that Silicate-Free Bleaching is the answer to every textile problem, but if you're having any trouble due to silicate scale and insoluble residues, Becco Silicate-Free procedures* — freely available to the textile industry — will help you.

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*U.S. Patents 2,740,689 and 2,820,690

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 122, No. 9
September 1958

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TIME SAVER for busy readers

Here is a summary of some of the major articles in this issue

Use it to organize your reading time most effectively

Million-dollar spinning frame 73

■ This month the Whitin Machine Works introduces a completely new spinning frame, which represents an investment of a million dollars in research and tooling costs. The frame features narrow width (27" over-all), straightline spinning, individually driven spindles, traverses up to 12", balloon control rings, new builder motion, and an arrangement for dispersing the heat generated by the motor.

How you can cut your bleaching costs 79

■ A new procedure for bleaching cotton goods is outlined. It involves the application of a hypochlorite treatment between the caustic stage and the peroxide stage in a continuous peroxide bleaching range. The author shows how peroxide usage can be reduced 50% or more.

Saved: 400 man-hours a week 82

■ Joanna Cotton Mills Co., Joanna, S. C., is using a new-type drawing-in machine and method of pattern preparation. The mill is saving about 400 man-hours each week, and expects the installation to pay for itself in two and a half years.

Operating woolen card feeders 85

■ A veteran woolen carder sums up successful operation of woolen card feeders: Constant stock pressure against clean spikes, a sensitively balanced scale, plus a compact feed table insure a uniform delivery of stock to the feed rolls of the breaker card. From his long mill experience, he gives useful pointers on how to bring about these desirable conditions.

Daily report of inventory position pays off 92

■ Fulton Bag & Cotton Mills' customer relations were suffering because of a manual inventory control system which was inadequate, expensive, and unwieldy. A more efficient and reliable system was urgently needed. With the aid of the systems and procedures staff of a textile consulting firm, management found that by proper utilization of existing data processing equipment a daily Status of Inventory and Sales report could be mechanically produced with direct payroll savings (over the manual system) of more than $10,000 a year. Sales and production personnel use the report as a daily operating tool.

Fiber fineness—How many tests? 97

■ This study shows that Micronaire testing of two samples per bale exceeds the requirements of the formula recommended by ASTM. One test per bale can be considered adequate, provided a variation of + 0.1 or less from the true mean in 75% of all bales is satisfactory, and provided that a variation of 0.2 to 0.4 in 25% of all bales is not considered excessive.

How much will P.A. cotton cost? 100

■ Preliminary cost estimates for the production of partially acetylated cotton yarn and fabric are presented. Estimates are made both for new plants and expansion of old plants, at several levels of production. Factors considered include plant investment, working capital, manufacturing cost, chemical recovery, and estimated service charge and payout time.

How to shop for used lift trucks 112

■ Numerous used lift trucks are being purchased by the textile industry. They can be a good investment or a source of trouble—depending on the care with which they are selected. This article gives checklists which will help mill men to get the right truck for their jobs.

Non-binding top for men's socks 145

■ Men are buying substantial quantities of the new socks with tops that stretch more and bind the leg less. This article gives detailed instructions for knitting socks with the new tops on SCP and SCOP machines. Three different methods are outlined.

COMING NEXT MONTH

■ All eyes will be focused on Greenville, S. C., next month, where about 337 suppliers will be showing their wares to mill men in attendance at the 20th Southern Textile Exposition. TEXTILE INDUSTRIES for October will give a preview of the Show, including a list of all exhibitors, what they'll be showing, and who they'll have on hand to tell you about their products. There will also be a large-size floor plan, showing locations of all exhibitors at the Exposition, to help you to plan your day at the Show.

TEXTILE INDUSTRIES is indexed in the "Applied Science & Technology Index"

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Photo courtesy of Lowndes Products, Inc., Philadelphia, Pa.

Look what's sweeping the country

A rapidly growing and profitable field is the manufacture of nonwoven fabrics. The product shown here is a good example—a cleaning cloth of rare efficiency and economy. And one reason for its exceptional qualities is this: a principal ingredient of the bonding compound is CHEMIGUM LATEX.

To the cloth CHEMIGUM LATEX helps supply the soft texture needed on both smooth and irregular surfaces for light dusting. Yet it also assures adequate abrasion resistance and tear-strength to withstand rough usage.

CHEMIGUM LATEX is a colloidal dispersion of a butadiene-acrylonitrile copolymer. It is used along with modifying materials, in the bonding agent of nonwoven fabrics to impart permanent adhesion, flexibility and softness to the smooth, porous, multidirectional strength mat of random fibers.

CHEMIGUM LATEX is easily handled and compounded. No complicated equipment or processing problems are involved in giving you an unusual product of wide application. Write for details and the latest *Tech Book Bulletins* on CHEMIGUM LATEX in nonwoven fabric and many other uses. Address: Goodyear, Chemical Division, Dept. U-9439, Akron 16, Ohio.

Chemigum—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

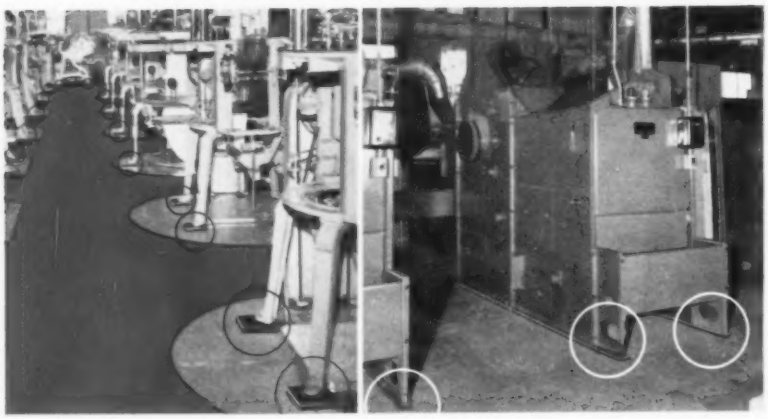
GOODYEAR

CHEMICAL DIVISION

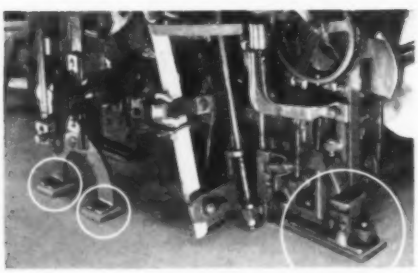
Kemi-Kleen—T. M. Lowndes Products, Inc., Philadelphia, Pa.

Leading Textile Mills Report...

UNISORB Cuts Costs Reduces Noise and Vibration



Unisorb pads are used under all types of equipment to save installation time, eliminate lagging and bolting and reduce noise and vibration. Preparatory equipment, Circular Knitting Machines and Looms, as shown here, typify Unisorb installations. Unisorb is the only flexible mount available in variety of grades to suit "vibration personality" of each machine.



Unisorb pads save up to 75% in installation time — just apply cement to pad and set in place. **No danger of "walking"** and machines can be moved any time. Every mill can be made quieter and more efficient.

Make Sure All Your Machines Are On Unisorb! Send for Sample and Free Book — or contact your nearest Unisorb Distributor . . .

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Textile Supply Company, Dallas, Texas;

UNISORB 212 SOUTH ST. BOSTON 11, MASS.
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Name.....
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FE8-31

by J. C. C.

► You are right—September coming up and a Happy Labor Day to you all.

Someday we are going to get a Greer's Almanac and tell you just what the weather is going to be each month—how the fishing is, etc. For the time being, though, summer draws near to an end, baseball comes

along to another World Series, and football teams get underway.

Why do they start football a week or so earlier in the South where its hotter and league baseball a week or so earlier in the North where its colder? There's a riddle for you.

If you like baseball, just start to figure how much textiles enter into baseball.

What has baseball to do with textiles?

Well, you know practically everything has to do with textiles, and if you start figuring there are two major leagues with 8 teams each, 25 players to a team, and let's say 5 suits, complete with socks, to a man —that's 2,000 or so suits just for the two major leagues. How many yards of cloth to a suit? Hey, look where we are getting!

Then you take about 20 or so minor leagues (depending upon how many finish up the season) and on top of that all of those high school, college, city sandlot, and industrial leagues and the Babe Ruth and American Legion little leagues. We will bet you end up with something over a half-million boys and men in uniforms—all textile customers.

Of course, you could add in the tarpaulins to cover the field, the covers in the cushions you buy at the game, the pennants, and souvenirs. Did we miss anything?

You know you can't quit right here in the middle of things. Football teams start out in September, and think of uniforms for well over another half-million pro, college, high school, and sandlot football teams.

(Continued on page 10)

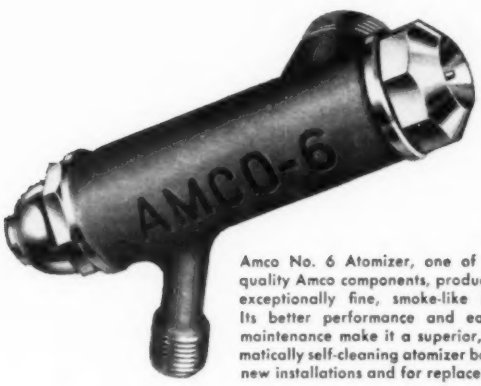
First introduced in 1928...

1928 was a banner year! That was the year Cannon Mills Company brought out its now-famous "towel ensemble" . . . announced *colored* hand and bath towels for the first time, as well. It was back in 1928, too, that Cannon also insured *finer* product quality with another innovation . . . AMCO Humidification.

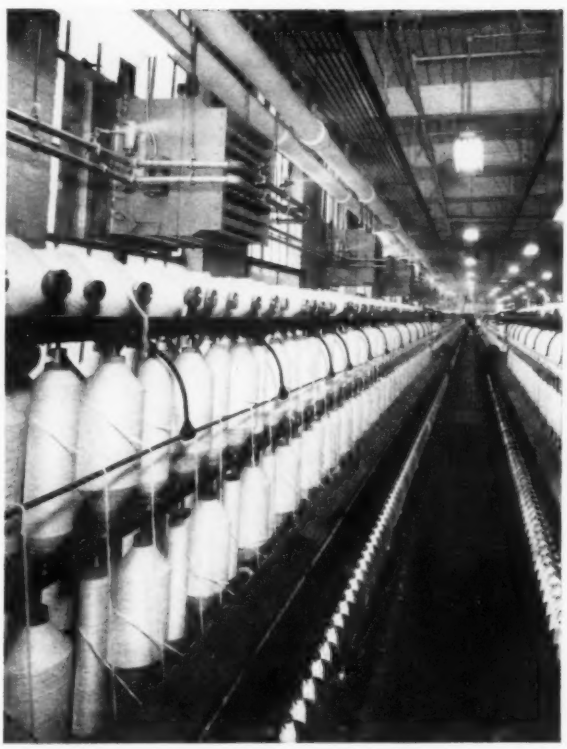
In the 30 years since then, as Cannon has diversified its product line and added new manufacturing facilities, American Moistening Company has continued to work closely with Cannon in the installation of *carefully engineered* Amco Air Conditioning Systems.

Amco, of course, designs all types of systems — humidification; humidification in combination with cooling, as in a ductless evaporative cooling system; unit dry-duct systems; or central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, let an Amco engineer suggest a solution to *your* particular air conditioning problem. Naturally, there's no obligation.



Amco No. 6 Atomizer, one of many quality Amco components, produces an exceptionally fine, smoke-like spray. Its better performance and ease of maintenance make it a superior, automatically self-cleaning atomizer both for new installations and for replacements.



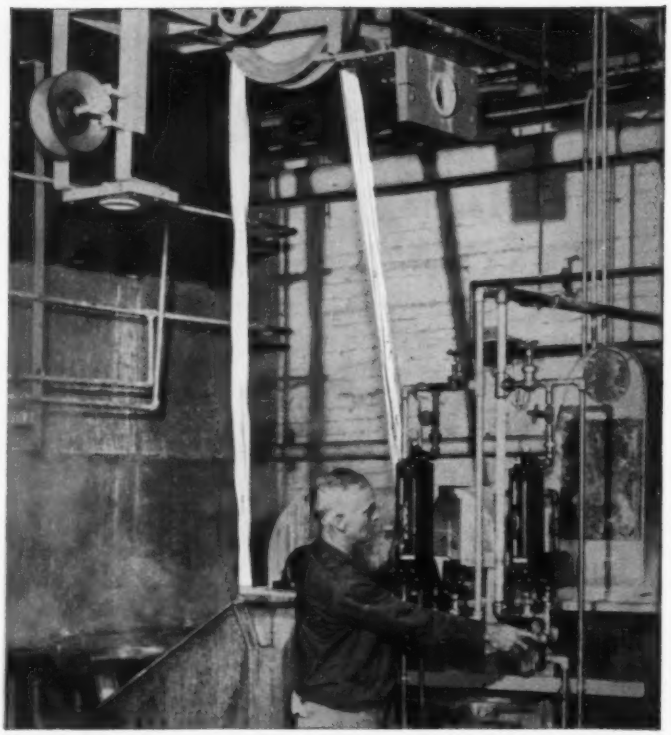
Amco ductless system of humidifying, cooling and ventilating installation in spinning room at Cannon Mills plant in Kannapolis, N. C.

AMCO
SINCE 1888
AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA
BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, ONTARIO

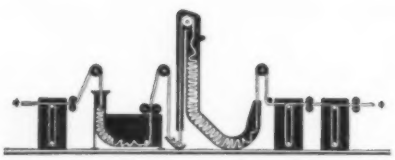
Joanna Western Mills

replaces kier process with Du Pont SOLO-MATIC peroxide bleaching process



• Flow of hydrogen peroxide is adjusted in Joanna's new Solo-Matic bleaching unit. Full production was maintained during change-over from caustic-chlorine batch process.

...saves 75% floor space—cuts time and production costs 27%



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available.

"Located in a busy Chicago industrial area, we were faced with a serious lack of space," reports Joanna Western Mills. "Our bleaching operation was built around an outdated, space- and time-consuming caustic-chlorine batch process. Then a Du Pont representative showed us how the Solo-Matic peroxide bleaching process could save time and valuable floor space while improving product quality. What's more, his practical approach helped us maintain full production during the change-over!"

Du Pont's Solo-Matic peroxide bleaching process can offer *you* similar space-saving advantages with additional savings in steam and water. Or if you want to increase production, the Solo-Matic process can help you *double* production in the same floor space, using either existing or new equipment. In any case, you get the added advantage of improved brightness, uniformity and fullness in your product. If you plan to install a new bleaching operation . . . or alter your present setup . . . it will pay you to contact your Du Pont representative or write us at the address below for the complete "Solo-Matic" story.

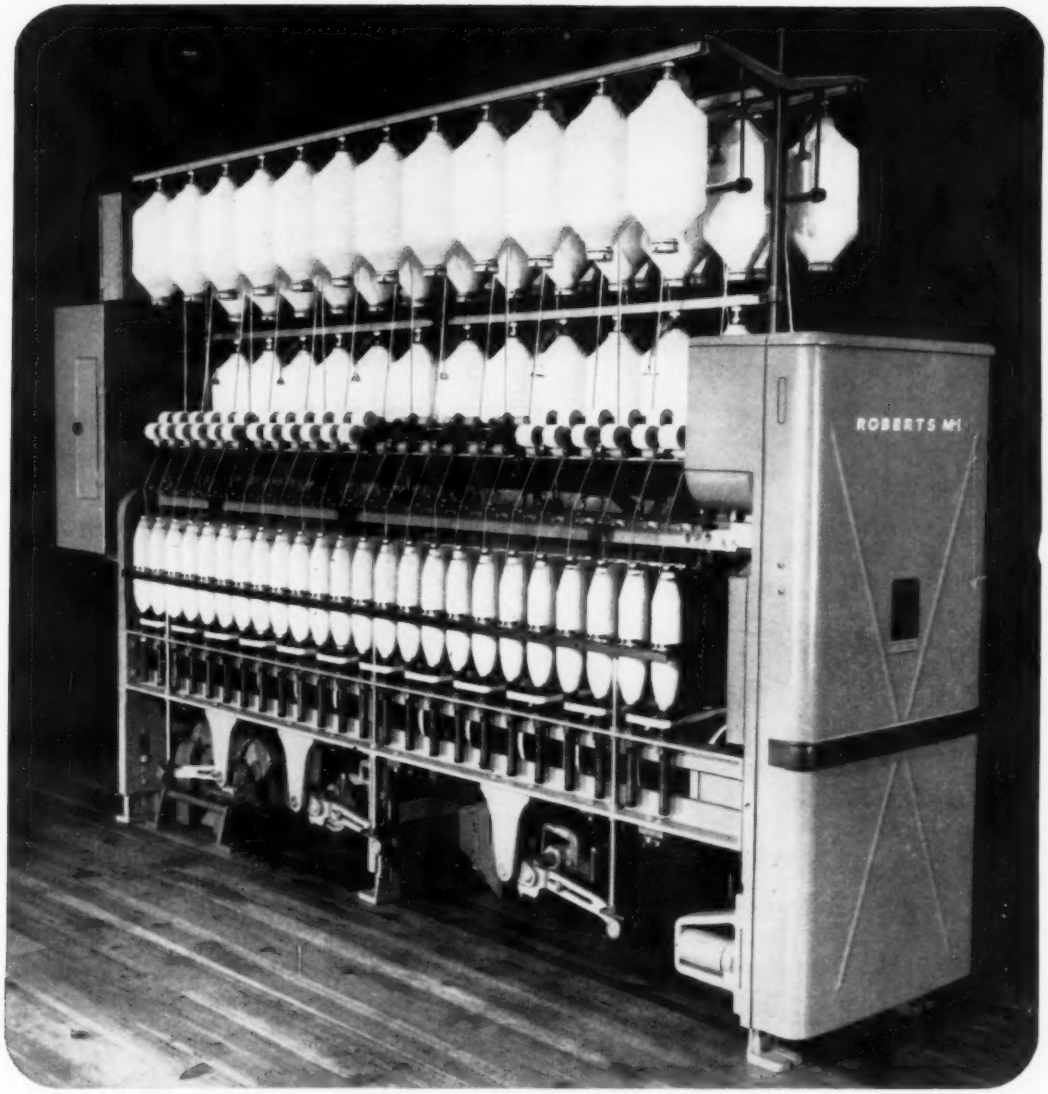
DU PONT ALBONE®
hydrogen peroxide

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

ELECTROCHEMICALS DEPARTMENT
Peroxygen Products Division

E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

330 Roberts 25-inch Frames, with over 105,000 spindles, have been installed in American mills in the past two years. These Roberts Frames are very ruggedly built and exceptionally simple in design. Only tried and proven principles are used, which insure consistent high quality results.

Roberts M-1 Frames produce better yarns at higher front roll speeds and put more ounces of yarn on the bobbin. The ball bearing construction provides smoother operation plus reduced power use. Changes in draft, twist, lay, or speed are made very simply. Roberts M-1 Frames are available in 25-, 36- and 39-inch widths, for cotton, synthetics, worsted or blends, in short or long fiber lengths.

The benefits of big package spinning are available at **$32 to $40 per spindle** including freight and installation

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

Shorts and Remnants

(Continued from page 6)

Whew! It's a good thing ole S&R is not a statistician. This thing could go on forever, and we could figure how many looms and knitting machines are kept busy on baseball and football uniforms—not to mention all those clothes the spectators buy to keep cool or hot to watch these games.

If you don't stop us, we'll get off on school starting again and all the new clothes for the young'uns — up to 25—tromping back to the learning factories. Let's just say—long live baseball, football, schools, and everybody that wears clothes and uses up textiles.

That's our thought for September, except its only another month until the Southern Textile Exposition at Greenville, S. C., (Oct. 6-10) and less than four months until Christmas and just remember to give textiles for Christmas.

► Before we get on with the business (Did you say "What business"?) of the month, ole S&R has just been reading about P. T. Barnum, the world's greatest showman. In 1855 he wrote, "Fully appreciating the powers of the press (to which more than any other cause I am indebted for my success in life) . . . " and "Advertising is to a genuine article what manure is to land—it largely increases the product."

So, if you have textiles to sell, tell folks about them. And if you have genuine articles to sell to the mills, well, we have the place to tell them right here in our ad pages.

Wants Temperature of Dry Can Surface

"Please let me know from what company can I get price and specification on equipment for measuring surface temperature on dry cans as mentioned in your July issue page 73?"

T. O. OTT, JR.
Lockwood Greene Engineers
Spartanburg, S. C.

Wants to Buy Cotton Fabric

" . . . I would like to buy a certain type of material (cotton) as per sample enclosed. A retail mail order firm in California is selling it which leads me to believe this material is made somewhere out West. How can I get a list of cotton textile mills? . . . "

BEN LEVITT
Chenille Craft
Dalton, Ga.

Wants Table Tufting Machine

"In your June issue, there appears an article entitled 'March of the Tufteds.' We would appreciate knowing the manufacturer's name whose machine is mentioned in this article, the table model machine. . . "

A. WALDMAN
Crown Tufting Mfg. Co.
Toronto, Canada

Wants Weft Straightener (Apr. '58)

"Formulamos a presente a fim de solicitar a VV,SS, o especial obsequio de nos mandarem maiores detalhes sobre o aparelho de endirei tar o tecido xadres, constante do recorte da revista em anexo, com o seu respective preco Cif Santos."

LANIFICIO PIRITUBA, S.A.
Sao Paulo, Brazil

Wants Thread Illuminator

"I am interested in the Mercury-Vapor Lamp that you use to illuminate threads on worsted spinning frames [July '58]. Would appreciate

100% AMERICAN ENGINEERED, MANUFACTURED & SERVICED

NEW DIMENSION IN PRODUCTION AND PROFIT

HARTFORD IMPROVED TOP DRIVE FILLING SPINDLE

INCREASED PRODUCTION WITH 25/32" WHORL
Brings you higher spindle speed — more pounds — greater yardage of yarn per spindle hour

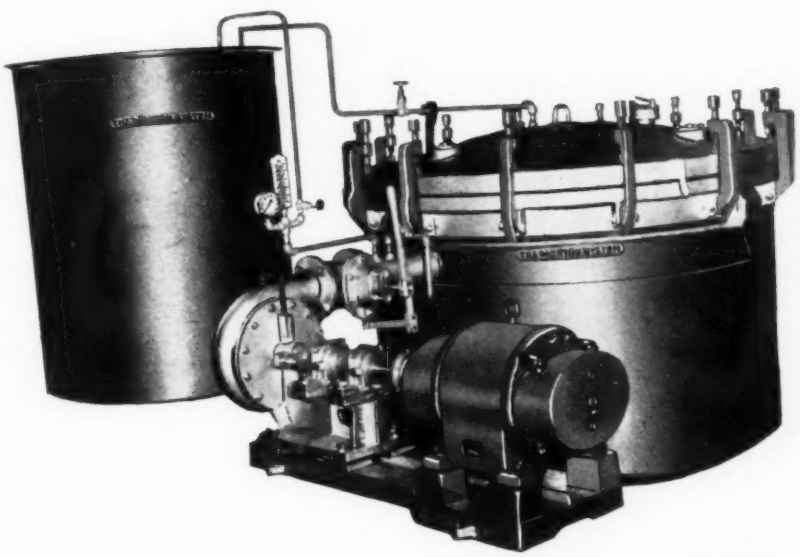
LOWER COST PRODUCTION
1) Elimination of acorn increases cleaning cycle time
2) Pre-greased Ball Bearings do away with spindle oiling for at least 5 years (when they are re-lubricated for another 5 years)
3) Power consumption reduced

BETTER YARN QUALITY
With Pre-Greased Ball Bearings you also are assured of cleaner yarn — more uniform yarn tension — more even bobbin lay — less ends down — cleaner rails and floors

GUARANTEE
Fully guaranteed against functional failure for an indefinite period

Look for it at the GREENVILLE SHOW Booth 453

HARTFORD MACHINE SCREW COMPANY
Division of
Standard Screw Company
Box 1776
GREENVILLE, S.C.



MORTON SYSTEM STOCK DYEING MACHINE

DURABLE

MORTON SYSTEM DYEING MACHINERY IS BUILT TO TAKE TOUGH TREATMENT!

Careful planning, precision engineering and skilled workmanship all work together in Morton System Dyeing and Drying Machinery.

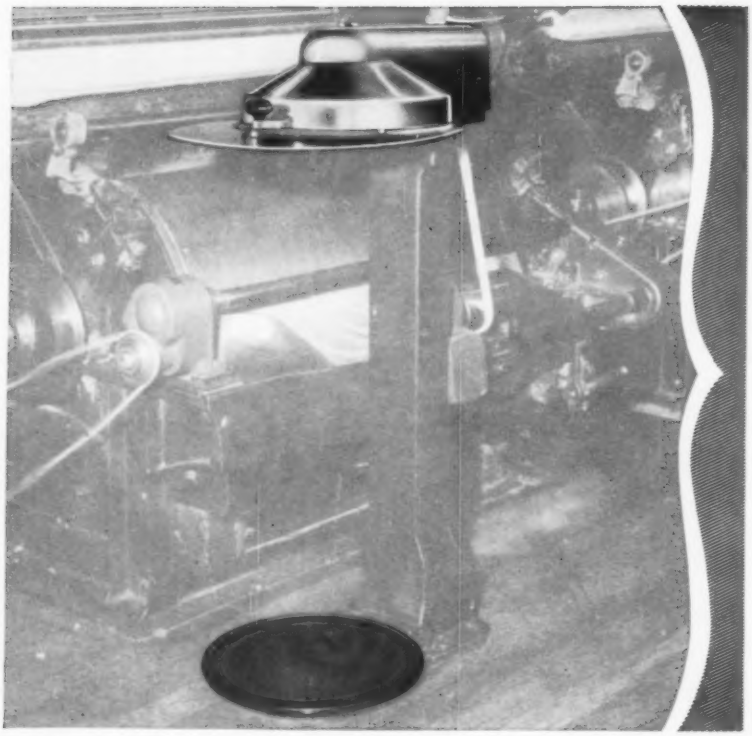
Morton System Dyeing and Drying Machinery can take every day tough dyehouse treatment . . . and you can count on more efficiency and level shades on cotton, wool or synthetics.

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS



SOUTHERN STATES' NEW COILER HEAD AND BASE MAKE CONVERSION TO LARGER CANS SELF-PAYING

For mills seeking a low initial cost for conversion to larger cans, Southern States' new conversion unit is the answer. It consists of: 1) the identical, vastly improved ball bearing head used on the new complete coiler; 2) an adapter spacer and upright shaft for increased coiler height necessary to accommodate 36" or 42" cans; and 3) a new, standard-type base assembly with a conventional gear system for driving the can table. All necessary components are furnished in kit form for quick installation, *using your existing stands.*

Southern States' Conversion Units are designed for use on any make cotton card and for accommodating cans of larger diameter.

Case histories of mills prove conclusively that Southern States' conversions are so economical they soon pay for themselves. For a small initial investment, you enjoy all the advantages of more efficient handling; lower operating costs; improved quality; simplified oiling; ease of maintenance; smaller parts inventory; and years of satisfactory service.

Get full facts from your Southern States representative or write direct to us for Technical Bulletin No. 205.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

your sending complete specifications and cost for a 200-spindle Whitin converted spinning frame."

M. J. PINSON, JR.
Supt.
Drakes Mill
Drakes Branch, Va.

Wants Slitters

" . . . We are interested in buying machinery to cut fabric into ribbon . . . would appreciate very much, if you could give us names of companies supplying this type of cutting machines. . . "

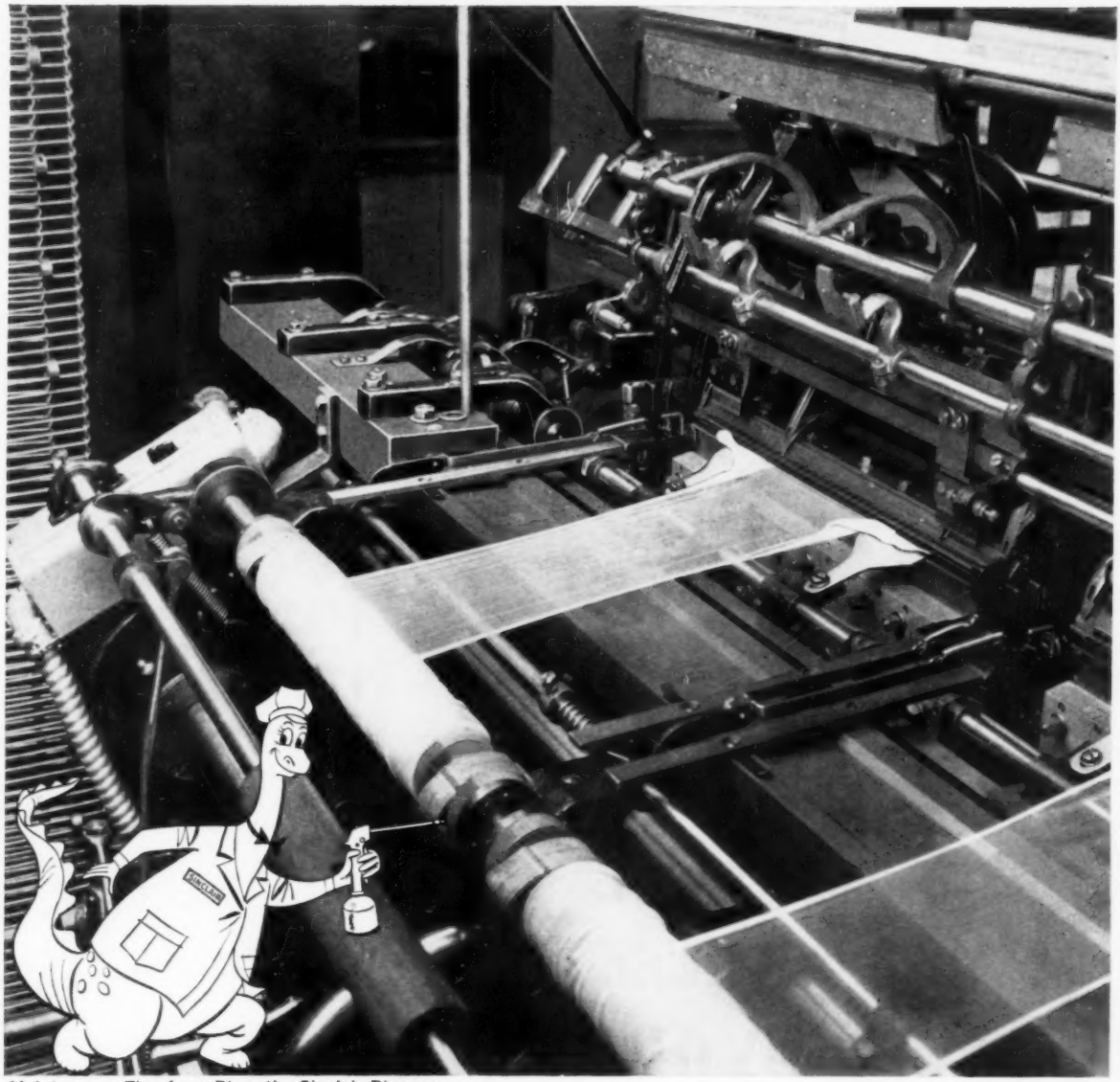
RICHARD L. PICK
Dorset, S.A.
Mexico, D.F.

► New president of the Vat Dye Institute, promoting vat dyes to consumers, retailers, etc., is **H. J. Daigneault** of National Aniline Div., Allied Chemical Corp. Congratulations and S&R's offer to help any time.

Mr. Daigneault

► We still get some funny ones on those return cards in the middle of the book. Intended for requests for more data on ads, new products or advertisers' literature, folks get mixed up now and then and use them for other purposes. For example, a card from "Maire McCall" seems to have been for the attention of "Jean Dennis and Elaine Dennis." The sender said, "I like you, Elaine. Hope you are fine." He said the same to Jean with a P.S. "See you next Sunday." TI paid 4¢ to retrieve this, just as we did one from a Lowell, Mass., reader who wants to buy a Lewis-Shepard lift truck [July '58] but sort of left it to us to guess his name. Maybe he's bashful.

► Last month we mentioned an inquiry from Salt Lake Deseret Industries. Thinking they just couldn't spell so good, we commented. But our own Assistant Editor **Dorothy Eudy**



Maintenance Tips from Dino, the Sinclair Dinosaur

Makes Needles Tend to Their Knitting

Here's why Sinclair Crystoil keeps needles knitting. This specially-formulated needle oil keeps needles free of rust, resists encrustation, actually removes size or crust build-up.

Another advantage: Crystoil's light color makes it easier to wash stains out of knitted goods. And because Crystoil contains a special oiliness agent for greater anti-wear and anti-rust protection, needles last longer, too.

Look into *all* the advantages of Sinclair Crystoil or Crystoil Light (for finer gauge machines). Call your local Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

SINCLAIR

CRYSTOIL NEEDLE OILS

Whatever you buy
IN TEXTILES "made in U.S.A."
gives quality you can trust

Stickers for your mail are offered at no charge. Large quantities at cost as a public service.

YOU CAN REDUCE YOUR COST

. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin

Shorts and Remnants

delivered an epistle to S&R as follows:

"The word 'Deseret' means honey bee, as revealed to Joseph Smith by the Angel Moroni in the Book of Mormon. Joseph, unfortunately, stuck his head in a noose before the Mormons removed to Salt Lake City, but Brigham Young carried on nobly. He took over all of Joseph's wives (plus the sacred stones of revelation) and managed to acquire a goodly number of his own.

"Brigham frequently married twice in one day and during 1847 married eight wives. He ended up with 28 wives and 56 children, all of whom were housed in two almost identical buildings.

"He must have been a singularly humorless man, for he saw no significance in the fact that he named one 'The Lion House' and the other 'The Bee Hive.'"

There's more to it than that, but Dorothy has just told me more about "Deseret" than I want to know or even figured on knowing. We'll have to run a Mormon edition if we don't watch out.

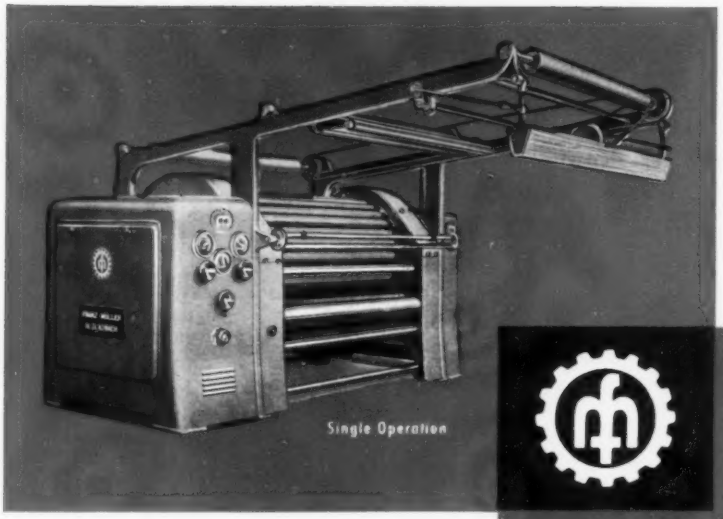
Also, that wasn't a "Mormon" automobile. It was a "Marmon," made in Indianapolis—and Ray Harroun won the first Yankee Memorial 500-mile race at Indianapolis with a Marmon Wasp in 1911 with a speed of just over 74 miles per hour. Marmon folded the passenger car business in 1928, the same year that Chrysler brought out the Plymouth. So there, Dorothy, I'll bet you didn't know about Ray Harroun. And we wonder if **Jimmy Campbell** from over at Avondale Mills at Sylacauga, Ala., still goes to the Indianapolis races and if he knows them back to that 1911 beginning.

► While we are on the subject, a good N. Y. reader makes some caustic comments about his getting TI in "beat up" condition. We have now agreed to pay Uncle Sam more money in the future to carry TI to you. Maybe he will be more careful. In the meantime, if your copy is damaged in transit, just let us know and we will send a brand new copy free.

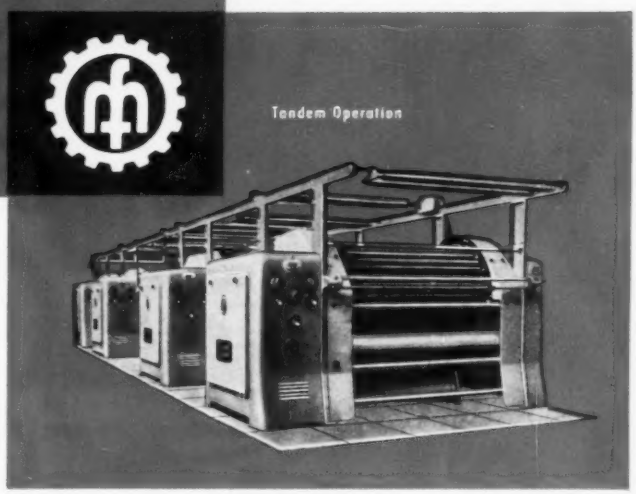
► According to **Clinton Reynolds,** ad agency for Steel Heddle Mfg. Co., more than 300 New England mill men attended a recent product ex-

(Continued on page 22)

WHY 80? MAYBE 30 ARE SUFFICIENT



THE RESULT
OF 100 YEARS
EXPERIENCE



30 of these high speed nappers replaced 80 standard nappers in a North Carolina mill

Please visit our booth
20th
Southern Textile
Exposition
October 6 - 10, 1958
Greenville, S. C.

for reasons of:

- New Processing Methods
- Unequalled Finish
- Highest Production
- Labor Savings

our newly established service centre in Greenville, S.C. offers the following facilities:

- New sales and show room
- Free demonstrations
- Large stock of spare parts
- Permanent German service man

For more information contact our Agents:

PARROTT & BALLANTINE
610 South Carolina
National Bank Building
Greenville, S.C. / USA
T = CE V2-86 91 / USA
TA = PARBAL

FRANZ MÜLLER
MASCHINENFABRIK • M.GLADBACH (WESTERN GERMANY)

Smith-Drum In-Line system at Woodside Mills, Liberty, S.C.

Stainless Steel dye beams for use with the Combination Beam and Package Dyeing Machines.

Cost Conscious Mills Save with Modern Smith-Drum Equipment

In-Line Multiple Kier, Beam and Package Dyeing Machines

Dyeing procedures are simplified with Smith-Drum In-Line Machines. All beams or carriers are dyed in the *same* bath under identical conditions of flow, pressure and temperature . . . uniformity is assured.

Installation is simplified. There's only one bath for from 1 to 8 kiers. All pipe connections and flanges are American standard for complete interchangeability. Shut-offs permit dyeing less than full loads. Distribution of additions to the dye bath are absolutely uniform.

And you get the priceless, practical experience of Smith-Drum engineers. Smith-Drum service doesn't stop with the sale of a machine — our engineers are always ready and willing to help you with your problems.

If textile processing is your business — dyeing, extracting or drying — look to Smith-Drum for the best in modern, cost-saving equipment.

Cut Production Costs with These Efficient Smith-Drum Machines

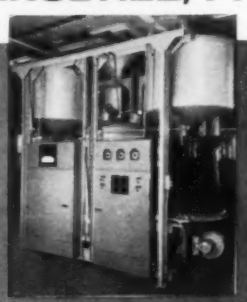
Rapid Package Dryers
Paddle Sweater Dyers
Rotary Hosiery Dyers
Circulating Skein Dyers
Cabinet Package Dryers
High Temperature Package Dyers
Mechanical Package Extracting Machines
Single Package Sample Dyers
Package Formers

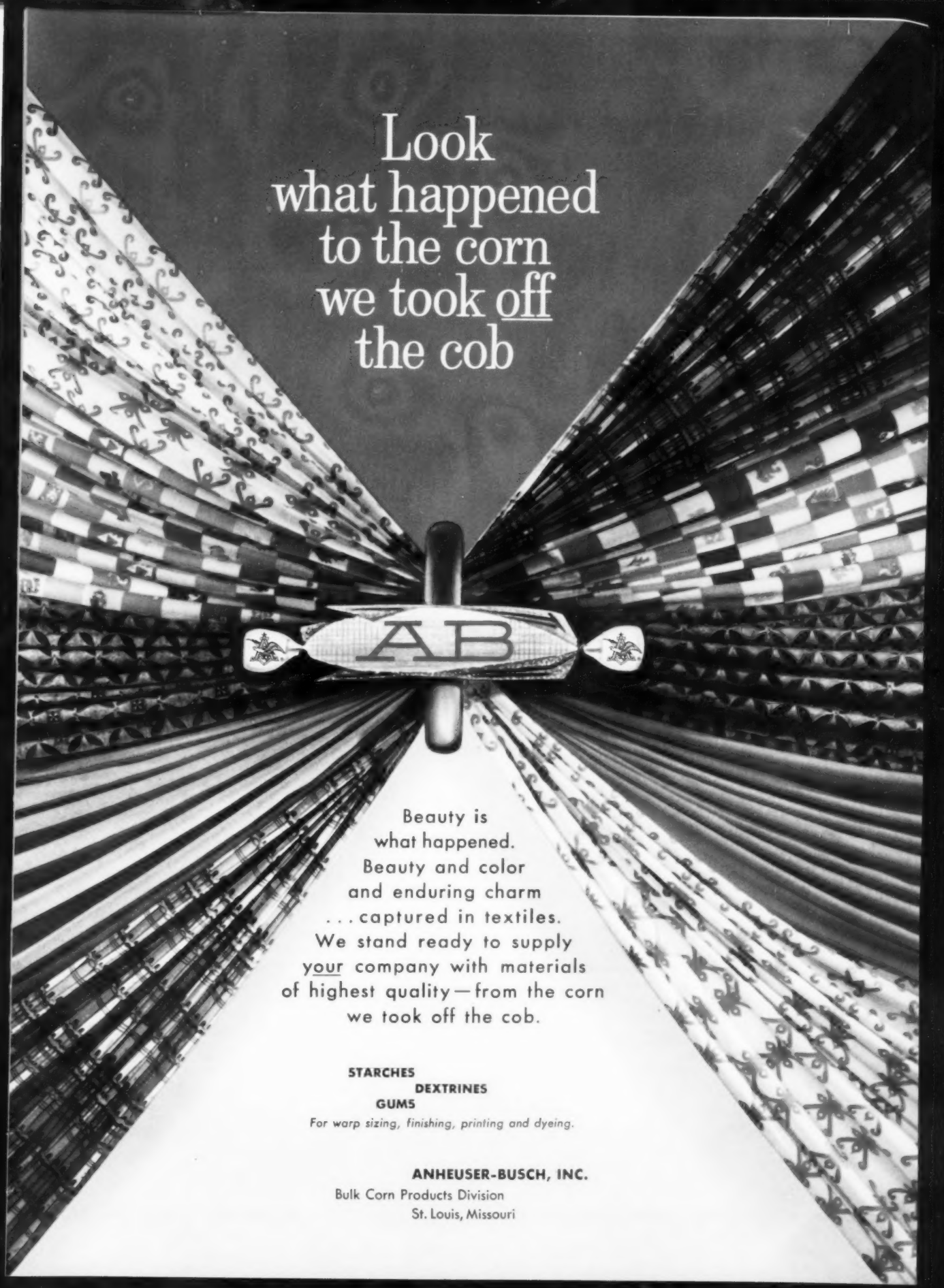
Smith-Drum Division

TURBO MACHINE CO., LANSDALE, PA.

Southern Sales Representatives: **Parrott & Ballentine, Greenville, S.C.**

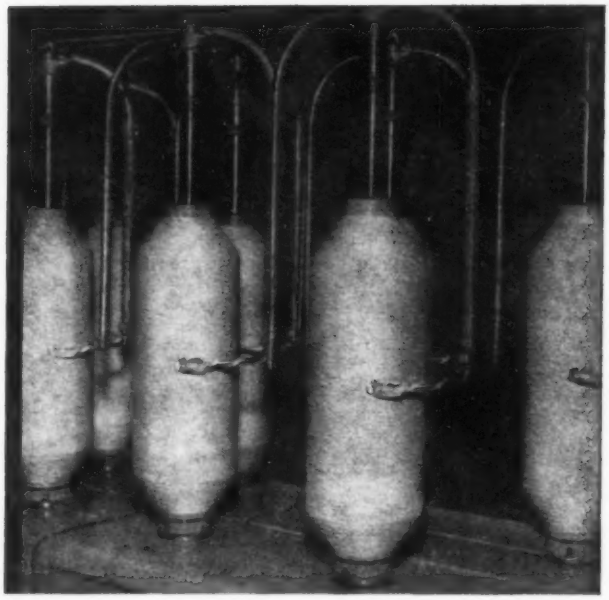
Turbo-Brewin Machine, a complete hosiery processing plant in one machine. Automatically boards, dyes and finish boards 60 stockings at one time. There are 2 groups of 30 forms each. One group is stripped and reloaded while the other is being processed, this is the only manual operation. The Turbo-Brewin Machine is part of the Turbo Family of precision engineered equipment for the processing of hosiery — preboarders, finish boarders, a combination of both, and boardless dryers. Complete information and data sheets on request.




Look
what happened
to the corn
we took off
the cob
AB
Beauty is
what happened.
Beauty and color
and enduring charm
. . . captured in textiles.
We stand ready to supply
your company with materials
of highest quality — from the corn
we took off the cob.
STARCHES
DEXTRINES
GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Bulk Corn Products Division
St. Louis, Missouri

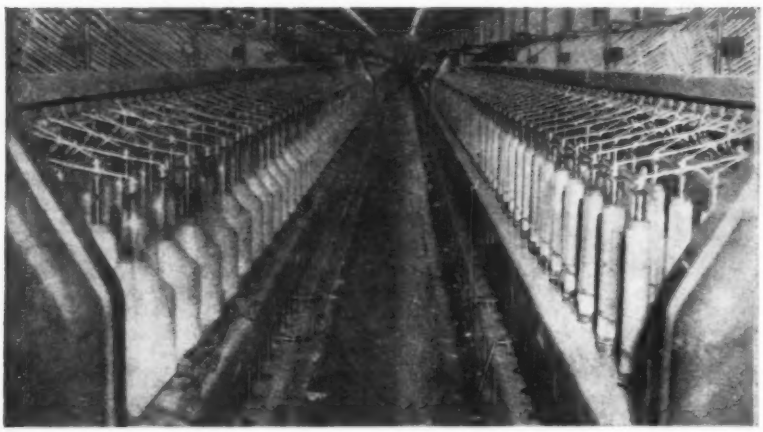
Get more ROVING on all sizes of bobbins

by J. L. C.



New Arro Flyers with High Tension Pressers increase weight 25-40% with no deterioration in quality

We believe this combination gives more roving on bobbins than any other system in the world. The evenness obtained equals or betters production with usual flyers. Weight is increased without increasing the twists per inch or the number of turns around the presser arm.



These frames are producing .60 hank from 70 grain sliver at a spindle speed of 735. Ends down average less than 2 per hank.

In a test recently run in the South on a 10 x 5 slubber with 2.50 hank roving, 1-7/16" combed cotton with a .90 twist multiplier and a spindle speed of 1004 r.p.m., the weight was increased from the normal 28 ozs. net to 39 ozs.—an increase of about 40%.

"Arro" Flyers can of course be put on any frame: for ultimate efficiency we recommend the Platt MS.2 Roving Frame. These streamlined frames produce an even non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames, we invite you to write for more information on those made by the *world's largest manufacturer of textile machinery.*

Slubbing bobbins 12" x 6½" dia. containing approx. 64 ozs. of roving, 1.0 hank, can be easily produced from good American cotton.

New "Arro" Flyer has a finish considerably better than previously obtainable. Even the inside of the hollow leg is completely finished. Mill tests have shown that fibre accumulation is reduced at least 25%. Another important feature is that the threading slot is in the leading side of the hollow leg so air enters the slot and prevents escape of loose fibre.

Even if you don't wish to invest in new frames to get heavier packages, consider the proven "Arro" Flyers for your present frames. Over 3,000 are running in the south. Call Gene Bozeman at Charlotte, (FR 5-1640), Harvey Clinch at Greenville, (GR 9-6257), or the writer at Framingham, Mass., (TR 3-7496). Any one of these numbers will give you more information about cost, etc.

ATKINSON, HASERICK & CO.
INC.
FRAMINGHAM, MASS.
336 Ridgewood Ave., Charlotte, N.C.
Greenville, S.C.
Philadelphia, Pa.

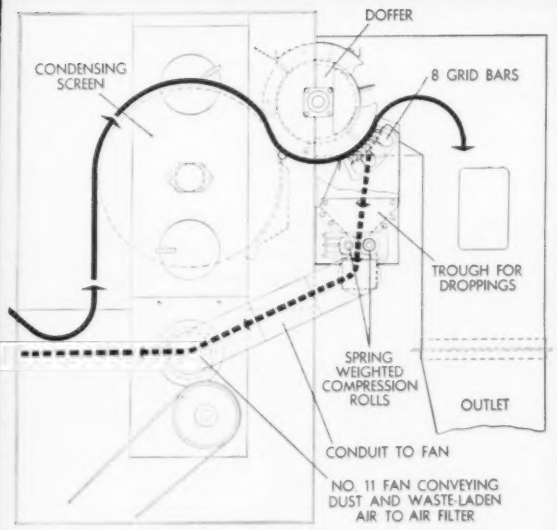
PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND
Marketing the textile machinery made in the works of Platt Bros. & Co. Ltd., Howard & Bullough Ltd., Dobson & Barlow Ltd.

Poor cotton giving you trouble?
Dust and fly a problem?

NEW SACO-LOWELL *Automatic* CLEANING UNIT

FOR ALL NO. 11 DUST & WASTE EXTRACTORS

- ★ Offers 30% (approx.) increase in cleaning efficiency of No. 11 Dust and Waste Extractors.
- ★ No extra beating of the stock — no increase in fibre breakage or neps



This view shows the passage of stock and droppings through the No. 11 Desk and Waste Extractor. All droppings are automatically carried away. Stock movement is indicated by solid lines; droppings by broken line.

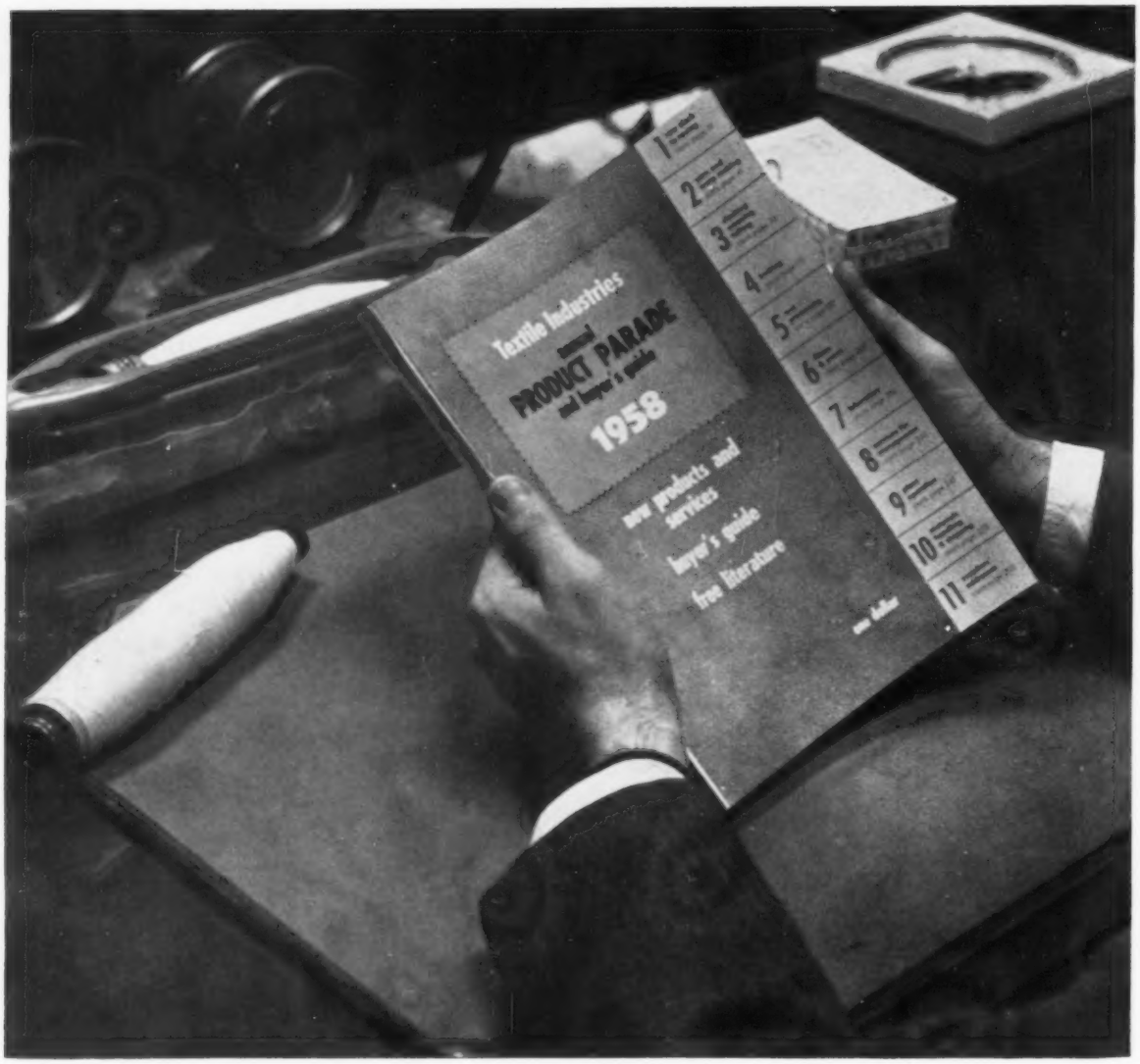
Here is one of the low cost answers to help in proper cleaning of the poor 1957 cotton crop. This new Cleaning Unit is completely automatic, waste never has to be removed manually, does not require extra labor to operate. Mill tests show that the quantity of trash removed by this NEW CLEANING UNIT is equal approximately to 1/3rd of the amount of waste removed by any efficient unit in the opening line. Waste taken out includes motes, stem, leaf, boll and seed fragments. Is installed easily and inexpensively, assures cleaner stock that results in higher quality yarn.

Contact your nearest Saco-Lowell Sales Office for complete information.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA



4 IN 1 PACKAGE for TEXTILE BUYERS

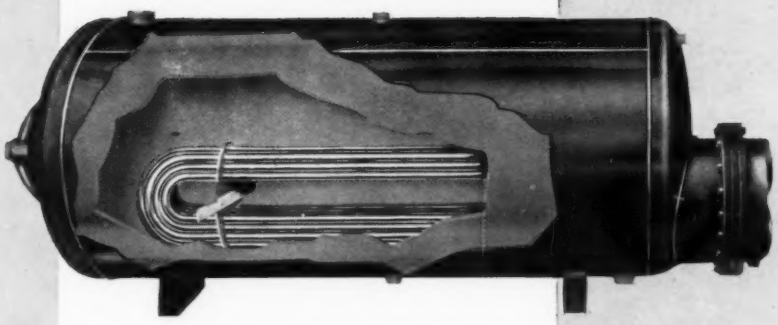
- New Equipment.
- Available Literature.
- Sources of Supplies.
- Advertising of Suppliers.

TI's Annual Product Parade includes the largest review of New Machinery, Equipment, Dyes, Chemicals, Fibers, Supplies and Services offered for the textile industry.

27,000 copies reach textile buyers throughout the world.

Indexed for easy reference and usage, it includes: Section 1—Raw Stock to Roving; Section 2—Yarn and Warp Making; Section 3—Slashing, Weaving, Tufting; Section 4—Knitting; Section 5—Wet Processing; Section 6—Fibers & Yarns; Section 7—Laboratory; Section 8—Services for Management; Section 9—Plant Operation; Section 10—Materials Handling & Shipping; Section 11—Suppliers' Addresses.

1959 Edition will be issued in Mid-November 1958. Closing date for advertising is October 20, 1958.



P-K Pre-Krete®-lined storage water heaters

give you added years of rust-free service

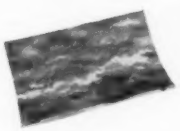
Why buy a plain steel storage water heater when you can have a P-K Pre-Krete-lined Heater with twice the life at only slightly higher first cost?

P-K, and P-K alone, gives you thermal design with a 75-year record of heat transfer experience, *plus* the corrosion protection of a non-staining, non-toxic, inert, special formula Pre-Krete lining that doubles the life of the heater—an exclusive P-K advantage.

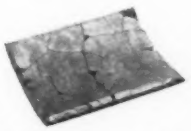
Pre-Krete is a pre-blended, low soluble, hydraulic cement with special additives. It is unaffected by extreme temperature changes and will not shrink, flake, or crack. If lining repairs are ever needed, one man can make them easily with minimum downtime.

For complete details, write for Catalog 19 on P-K Storage Water Heaters. For information on lining your existing plain steel vessels with Pre-Krete, ask for Bulletin 1012. The Patterson-Kelley Co., Inc., 2809 Wilson St., East Stroudsburg, Penna.

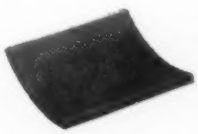
IN



Plain steel plate will corrode even under normal water conditions.



Ordinary cement linings tend to flake, crack and shrink, resulting in high maintenance costs.



Pre-Krete-lined plate is still in perfect condition after exhaustive testing.

Patterson Kelley

Storage Water Heaters • Instantaneous Heaters
Converters • Freon Chillers and Condensers

all set and ready to GO!

Another year and it's Show-Time!

So, Greenville here we come.

The Garland exhibit is en route with fine products that have served the textile industry well for nearly a century . . . Garland Pickers . . . Garland Bunters . . . Garland Rod Lubricant . . . Garland Hair-on-Loom Leathers . . . Garland Hammers . . . Garland Mallets.

Opening day, Garland Company representatives will unlatch briefcases and unveil a never-before-seen new Garland product that's sure to be the talk of the Show.

Drop by. Say Hello. See it.

Garland MANUFACTURING CO.

Manufacturers of RAWHIDE LOOM PICKERS • SPONGE LEATHER BUNTERS • RAWHIDE HAMMERS AND MALLETS

56 WATER STREET • SACO • MAINE

Shorts and Remnants

(Continued from page 14)

hibit and forum (see photo below) of this company. The affair was held in

Providence R. I., Portland, Me., and Andover, Mass., and featured demonstrations and discussions of care and repair of reeds and shuttles.

► **M. F. Hutchason,** Weave Overseer, Wm. E. Hooper & Sons Co., wants to know who makes wood lug strap stamped with a diamond with word "Dixwood." Seems he put one on loom for test in 1951 and forgot about it. We suggested he send it to TI and we'd photograph and run picture for further comments.

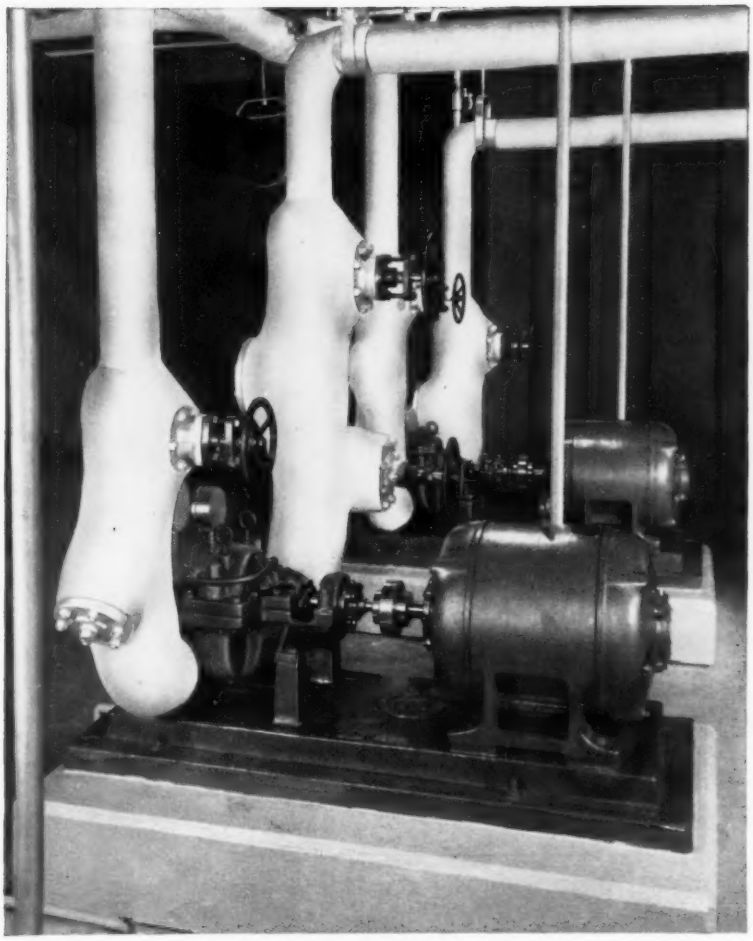
► **Lloyd G. Gregory,** Bradford Cotton Mills, Ltd., Maitland, N.S.W., Australia, wants details on yarn and fabric testing and testers.

► They must still be running leather roll covering on Formosa as **Chorng Sheu Su,** China Wool Textiles, Inc., Ban-Chow, Taipei, Taiwan, writes "What does the 'synthetic cots' mean in 'Tips for Running Cotton-Nylon Blends' [May '58]?"

► **P. M. Billimoria,** Tata Mills, Ltd., Dawbar, Bombay, India, goes back to Aug. '55 to answer a Draper ad for setting instructions for the "Midget Feeler;" Girard Knitting, Hatfield, Pa., writes for more on Exact Weight's "Shadograph" direct reading scale for yarn count [July '58 ad].

Tufted Textiles

H. E. Williams, Pur. Dept. Celanese Mexicana, S.A. Mexico, D. F., requests extra copies of June tufted section, not only for 1958, but 1956 and 1957 as well. The U.S.A. Tariff Commission also requests 1958 issue. We wonder why?



"Buffalo" Class "RR" Two-Stage Pumps

THEY PUMP MORE WATER AT LOWER COST

TESTIMONIALS from satisfied users prove the outstanding performance record of "Buffalo" Class "RR" Single Suction Multi-stage Pumps. These sturdy pumps are specially designed for high pressure and temperature clear water conditions.

The constant hydraulic balance of the "RR" design is the key to the high efficiencies these pumps deliver on the job. Rugged construction, generous bearings, extra-deep stuffing boxes — all add up to peak performance and long-lived dependability.

"Buffalo" Class "RR" Pumps are available in two and four-stage models, and in a variety of sizes to suit your needs. You will find them a best buy for any clear water service — hot or cold, at pressures up to 1500 ft. heads and at capacities from 20 gpm to 900 gpm.

Your nearby "Buffalo" Engineering Representative will be glad to show you the advantages of "Buffalo" Class "RR" Pumps — or write for Bulletin 980-E.

Every "Buffalo" product brings you the famous "Q" Factor — the built-in QUALITY which provides trouble-free satisfaction and long life.

BUFFALO PUMPS

DIVISION OF BUFFALO FORGE CO.

175 Mortimer Street • Buffalo, N. Y.

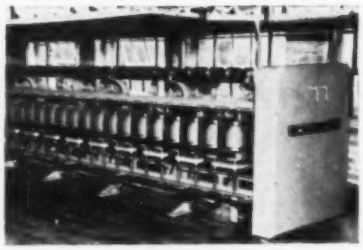
Canada Pumps, Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

"Buffalo" PUMPS

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

Shorts and Remnants



► This photo looks like a fugitive from the ad pages, either on Meadows Mfg. Co. twisters or Clover Mills, Douglasville, Ga., "Spinner of Good Carpet Yarns." Anyway **W. C. McKinney,** Pres. of Clover, sends the photograph of one of his Meadows twisters for "an early issue" and says "it produces the largest package in the industry consistent with the optimum size desired by carpet makers," and that "a spliceless yarn" made thereby will more than double tufting machine efficiency. So there you have it.

Posters for Carpet Mill

"Will you please provide me with information and literature on your TEXTILE INDUSTRIES poster service? . . We are primarily interested in the type of poster that would be applicable in a carpet mill."

RALPH F. LANGLEY
Gen. Supt.
Roxbury Carpet Co.
Saxonville, Mass.

► The posters are free—deal with every phase of textiles. When you see one you want, write for extra copies for your bulletin boards. That's just good TI service.

Warp Sizing

"We have just finished reading Article 20, the last in the series on Warp Sizing, by Dr. P. V. Seydel. These articles have been excellently done. . . "

S. A. SIMON
Chicopee Mfg. Corp.
Chicopee Falls, Mass.

"We are pleased to note that you plan to reprint. . . "

CLARK G. BERRY
Ch. Chem.
New Bedford Rayon Div.
Mohasco Industries, Inc.
New Bedford, Mass.

" . . . I definitely want a copy of this book for myself and perhaps two more for our weaving overseers. . . "

CHAS. A. SPENCER
Supt. Research
Pacific Mills
Rhodhiss, N. C.

" . . . We have never seen as full and detailed a discussion before on this aspect of Textile Processing."

STEVEN CERNY
Gen. Mgr.
Bay Mills, Ltd.
Midland, Ont. Can.

" . . . Up to now, texts on slashing have been as antiquated as books on a model T Ford. Now—thanks to TI —we have a really worthwhile book of reference on a vitally important subject. . . "

JOE DELANY
Gen. Supt.
Joanna Cotton Mills Co.
Joanna, S. C.

" . . . Most interesting and informative. . . "

V. O. ROBERSON, JR.
V.P.
United Merchants & Mfrs. Inc.
Greenville, S. C.

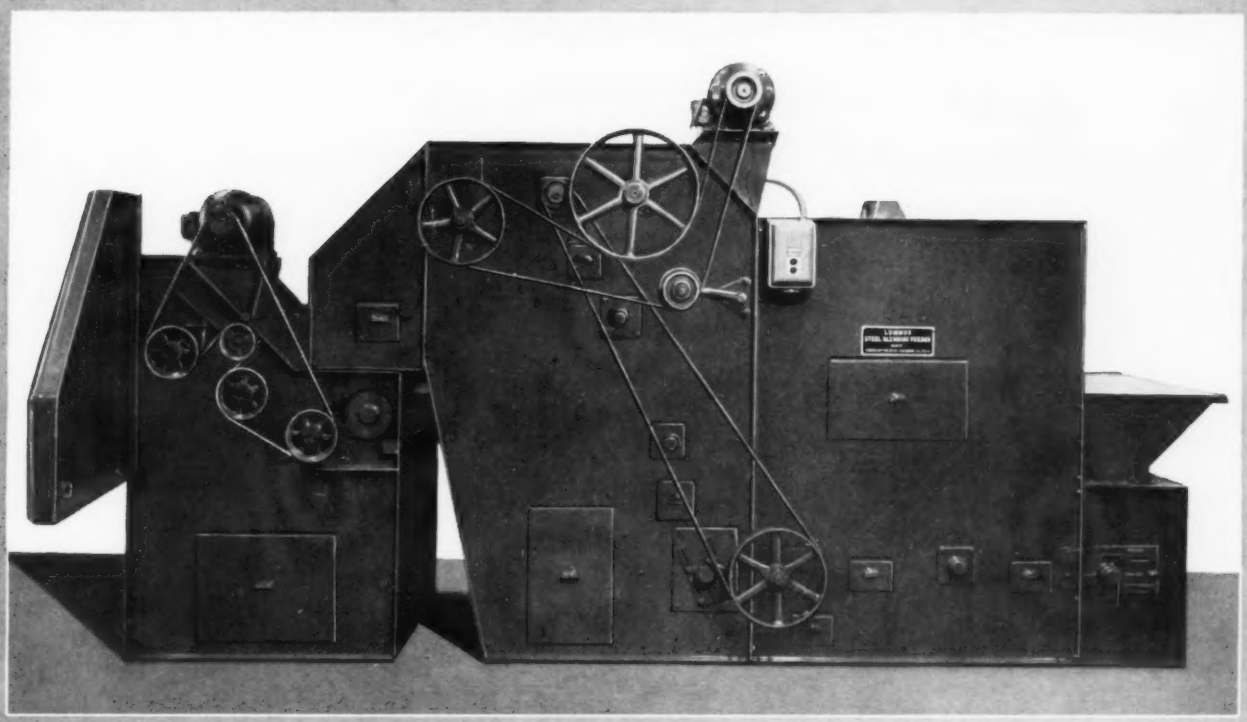
" . . . This service is most useful

(Continued on page 30)

For an "Ease of Care" Finish
On Cotton Knit Goods
STANSET
IS FAR SUPERIOR
Cotton fabrics finished with STANSET have superior dimensional stability — they retain their smooth appearance and shape for greater lengths of time despite repeated launderings. STANSET also speeds up drying time.
STANSET imparts lasting shrink resistance and has no adverse affect on light fastness. It will not affect your whites and it has superior non-yellowing characteristics. You will find low chlorine retention with these resins.
STANSET can make your finishing operations more profitable. If you would like to receive additional information about all the excellent characteristics of STANSET—just write us today. No obligation, of course.
STANDARD CHEMICAL PRODUCTS, Inc.
HOBOKEN, N. J. - CHARLOTTE, N. C.

THE PEPPER-SHAKER OPENER

A MACHINE DESIGNED PARTICULARLY TO TAKE PEPPER TRASH OUT OF COTTON



As more and more cotton is mechanically harvested, more and more Pepper-Trash is made by licker-in type lint cleaners, which grind up big leaf into fine particles.

Three beaters in the Pepper-Shaker — each with 380 spikes open the cotton and whip it over round, smooth grid bars to clean without damage.

Made by LUMMUS COTTON GIN CO.
Columbus, Georgia

Sold by ALDRICH MACHINE WORKS
Greenwood South Carolina

Arnel alert for '59!

In '58, Arnel turned up the big winner at every level—from mill to converter to cutter to consumer. Arnel made history with the giants of the industry—Cohama, Triplex, Fabrex, Folker to name only a few. Arnel triacetate racked up the orders, re-orders, promotions—it was probably the most tagged fiber of the year. And the season was spectacular for its *variety*—knits, knit effects, plains, prints, novelties, blends, sheers—*all* Arnel!

That was last year. How about '59? BIGGER!

Arnel is causing plenty of new excitement in mills right this minute. Newer textures, more unusual surfaces, more wonderful weaves, bigger performance stories are brewing *now*.

If last year means anything, and any mill man knows it means everything, the fiber most likely to succeed *has* to be ARNEL!

Celanese Corporation of America, New York 16, New York. Celanese® Arnel®

ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

TC
TENNESSEE CORPORATION

HYDRO

SODIUM HYDROSULFITE
CONCENTRATED

SODIUM HYDROSULFITE
CONCENTRATED

TC-HYDRO is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

AS MINERS OF SULFUR BEARING ORES

We have utilized our basic position in Sulfur Chemistry to produce another product of highest purity and quality for use in the Textile Industry.

WHEN YOU NEED IT—

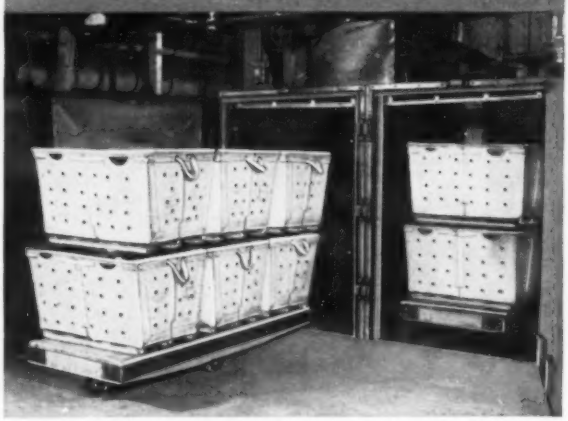
Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points — also small lot shipments are available from centrally located warehouses.

Phone, Wire or Write for literature and test samples if desired.

TENNESSEE TC CORPORATION
617-20 Grant Building, Atlanta, Georgia

for the best in
CANVAS Steaming
and Conditioning Baskets

LOOK FOR Lane



Designed especially for yarn conditioning, this economical Lane Style 34 Steaming and Conditioning Basket incorporates *all* these quality features for *long, dependable service at extremely low cost:*

- Special extra heavy Lane duck body for extra long wear.
- Light-weight, extra-strong, rust-resistant spring-steel frame with sturdy, hardwood bottom *double* riveted with non-rusting rivets.
- Rust-proof eyelets on all sides allow thorough efficient conditioning.
- Reinforced, rivet-fastened handles for safe moving.

STANDARD SIZES AVAILABLE

No.	Long	Wide	Deep
1½	18"	14"	12 "
2	22"	14"	14 "
2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there's only *one* Lane. *Always* look for the *Lane* mark—*to be sure!* Call for our representative. He's a specialist in adapting Lane baskets to your material handling problem. Write today.

Canvas Basket Craftsmen Since 1894

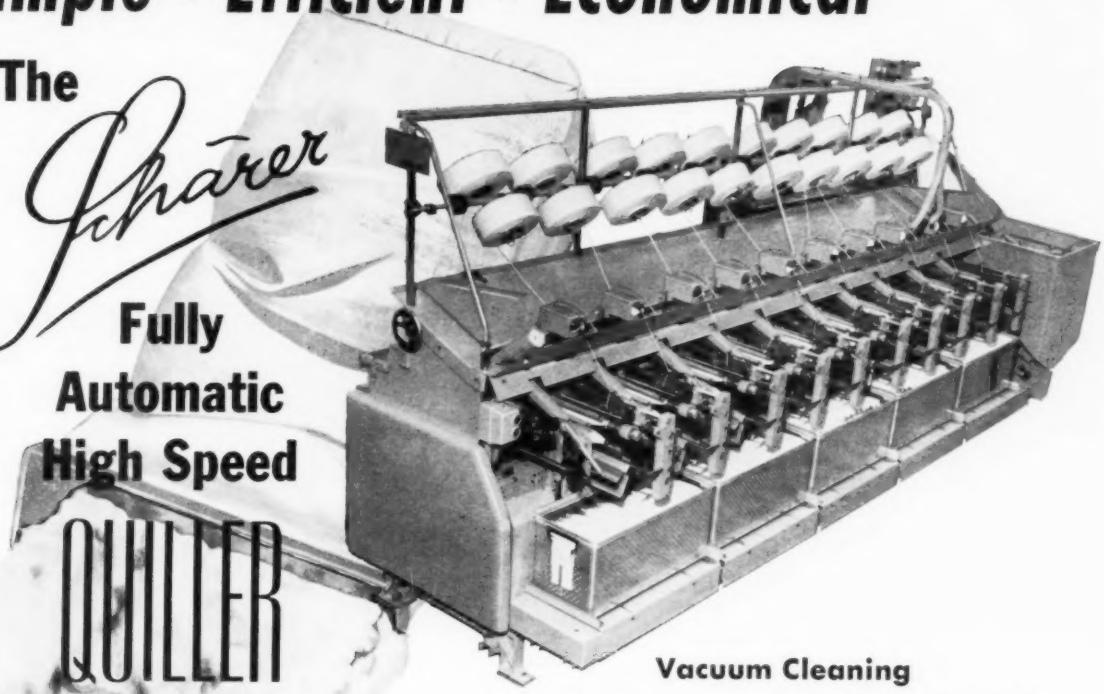
Lane

THE LANE BASKET

W. T. Lane & Bros., Inc., Poughkeepsie, New York

Simple • Efficient • Economical

The Scharer Fully Automatic High Speed QUILLER



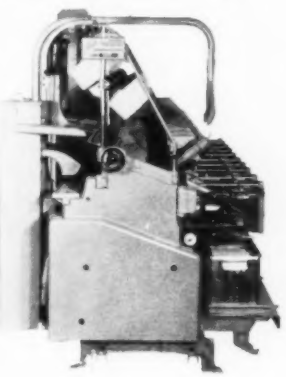
Simple to Operate — Any average operator can learn to operate and maintain the Scharer Quiller in a few hours. The Scharer machine is outstanding for simplicity of design with all working parts easily accessible.

Efficient — The exclusive Scharer nose tensioning device automatically produces even bobbins with more yarn per package. Full bobbins are carefully and accurately laid in boxes, ready for use at the looms. The Scharer Automatic Loading Device handles quills gently and prolongs their life.

Economical Operation — Records show far less than average down-time and consequently more hours of uninterrupted production. One 4 HP motor with variable speed control runs the entire frame at speeds up to 11,000 RPM.

Vacuum Cleaning

Twin blowers, at yarn level, blow dust and fly directly into a vacuum collector system. Far superior to overhead blowers in keeping yarn and winders clean.



The simplicity, efficiency, and economy of the Scharer Fully Automatic High Speed Quiller deserve your close investigation. Let us send you full information.

Ample stocks of replacement parts carried in our Spartanburg Warehouse.

Manufactured By: Scharer Textile Machine Works, Erlenbach/Zurich, Switzerland

"Winding Machines Since 1880"

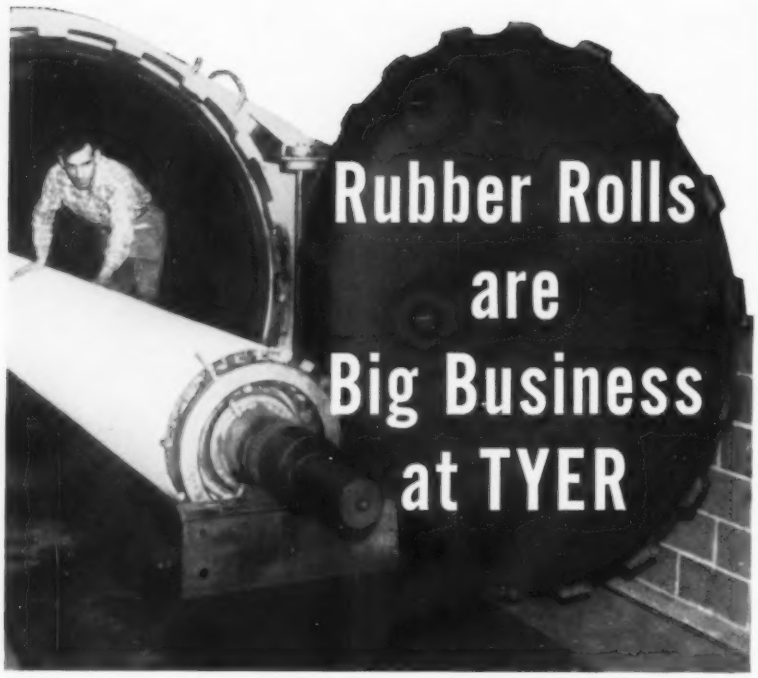
Sold and Serviced in the United States by:

On Display in Annex No. 8 Southern Textile Exposition

Yeomans Textile Machinery Company

P. O. Box 1661, Spartanburg, S. C.

Sole Scharer Agents in Canada: Hugh Williams & Co., 27 Wellington St. E., Toronto 1, Ont.



Tyer's expanded facilities for covering rubber rolls include the huge new vulcanizer shown above. 37 feet long, it has an inside diameter of 7 feet. Tyer grinders now accommodate rolls up to 60 inches in diameter and 366 inch face.

Tyer roll fabrication ranges in scope from tiny 1-ounce envelope rolls to giant suction press rolls used by paper mills. Hundreds of different compounds have been developed for our customers to take care of the functions to be performed by each individual roll.

In more than 30 years of roll manufacturing, Tyer has found the answer to many difficult rubber roll problems. Chances are, we can solve *your* problems, too. Write today for free brochure or a visit from a Tyer sales engineer.

TYER *Rubber Company*

ANDOVER, MASSACHUSETTS, U. S. A.

Shorts and Remnants

(Continued from page 24)

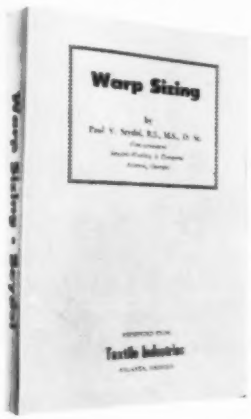
to the industry."

HALBERT M. JONES
Pres. & Treas.
Waverly Mills, Inc.
Laurinburg, S. C.

" . . . the majority of the technical experts of our country have admired this book. . . "

J. E. SCOBAR
Asesores Tecnico Textil
Medellin, Col., S.A.

► "Warp Sizing," praised above is a complete reprint of the 20 articles by Dr. Paul Seydel as carried in TI. Copies are now available with

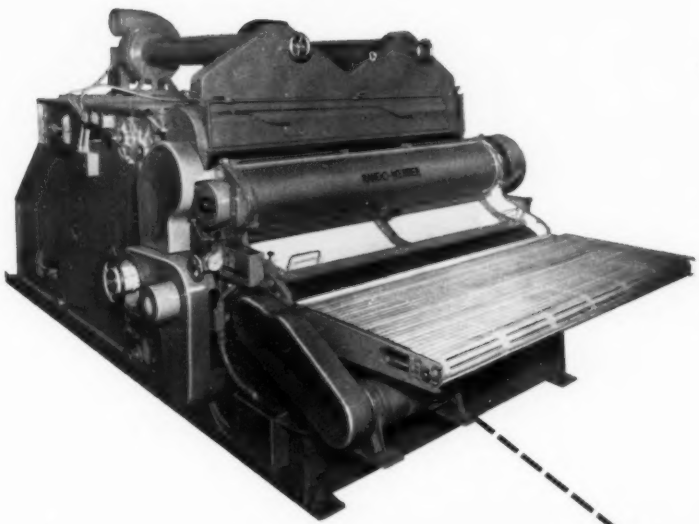


either *new, renewal or extension* 2-year subscriptions to TI for $5 *including the subscription.* This offer is for U.S.A., Canada, South and Central America. Other countries, $10.

Compliments on this series and/or orders for the book are coming from all over the world and include such as: **Z. B. Lane, Jr.,** Div. Mgr., United Merchants & Mfrs., Winchester, Va.; **Harold J. Northup,** Chem., Bradford Dyeing, Assn., Westerly, R. I.; **R. Carter Henry,** Mgr., Cotton and Spun Fibers Div., J. P. Stevens & Co., Inc., Piedmont, S. C.; **J. P. Elting,** Dir. Res., Kendall Co., Paw Creek, N. C ; **Milton Berkowitz,** J. Rossie Velvet Co., Mystic, Conn.; **Katherine Glass,** Res. & Dev., Callaway Mills Co., LaGrange, Ga.; **R. X. Oliveri,** Chas. T. Main, Inc., Boston, Mass.; **John L. Merrill,** Lowell (Mass.) Tech. Inst.; **Richard C. Jackson,** Great Falls Bleachery & Dye Works, Inc., Somersworth, N. H.; H. A. Astlett & Co., N. Y., for Sao Paulo, Alpargatos,

(Continued on page 34)

In the manufacture of Non-wovens, you get the MOST with RANDO-FEEDER® and RANDO-WEBBER®

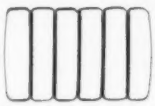


Available in 40", 60" and 84" widths

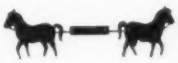
LOOK AT THESE ADVANTAGES:

Equal strength in all directions.

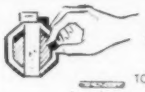
No waste—at least 98% fiber returned as web



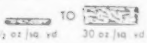
Low cost raw material

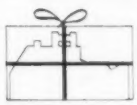


Stronger webs where delamination is diminished or eliminated. Normally entire web is formed in one layer.

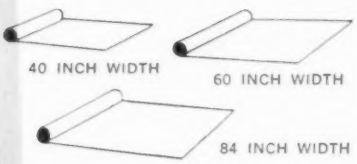


Flexible—controlled with the turn of a knob.





Package unit ready to operate with all motors and guards included. Electrical, air, and water connections are all that is required.



3 models for producing random web with square, even selvages.

TEXTILE DIVISION

CURLATOR®

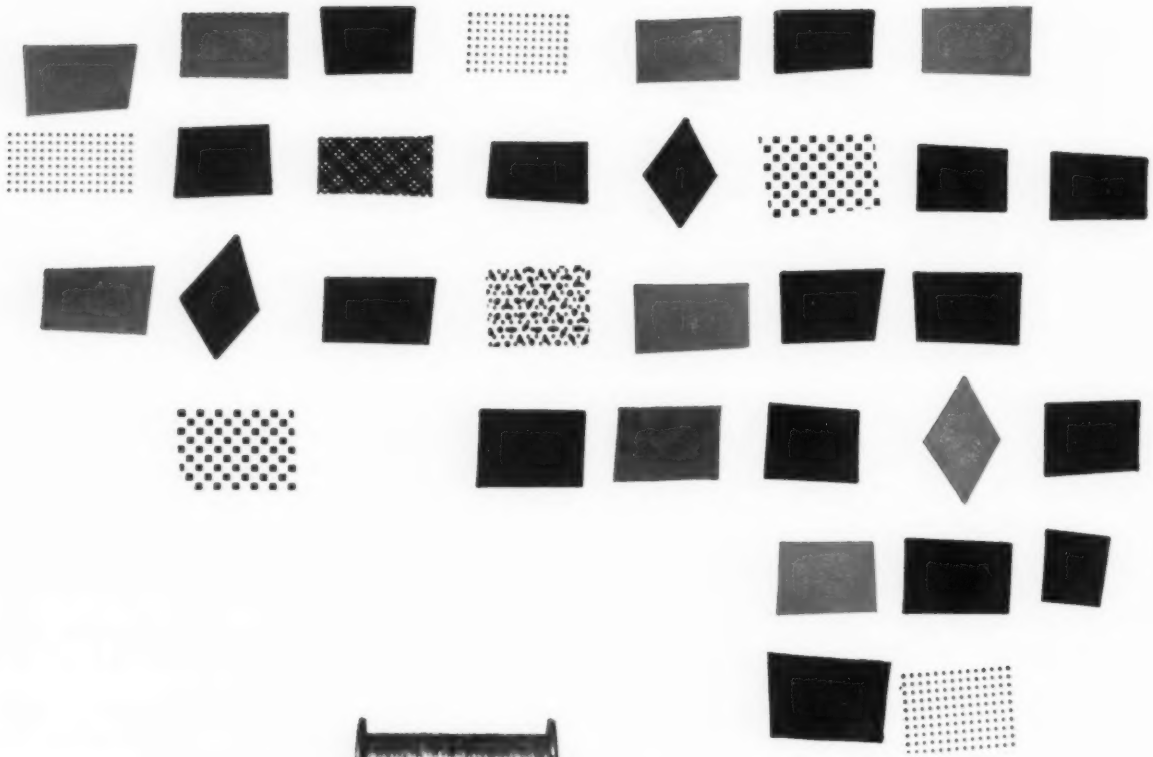
CORPORATION

EAST ROCHESTER, NEW YORK

WRITE for complete details in Bulletin No. 105. Inquiries invited.

EXPORT REPRESENTATIVES: Lendt & Company, 535 Fifth Ave., New York 17, N. Y.

SOUTHERN REPRESENTATIVE: Parrott & Ballentine 510 South Carolina, National Bank Bldg., Greenville, S. C.



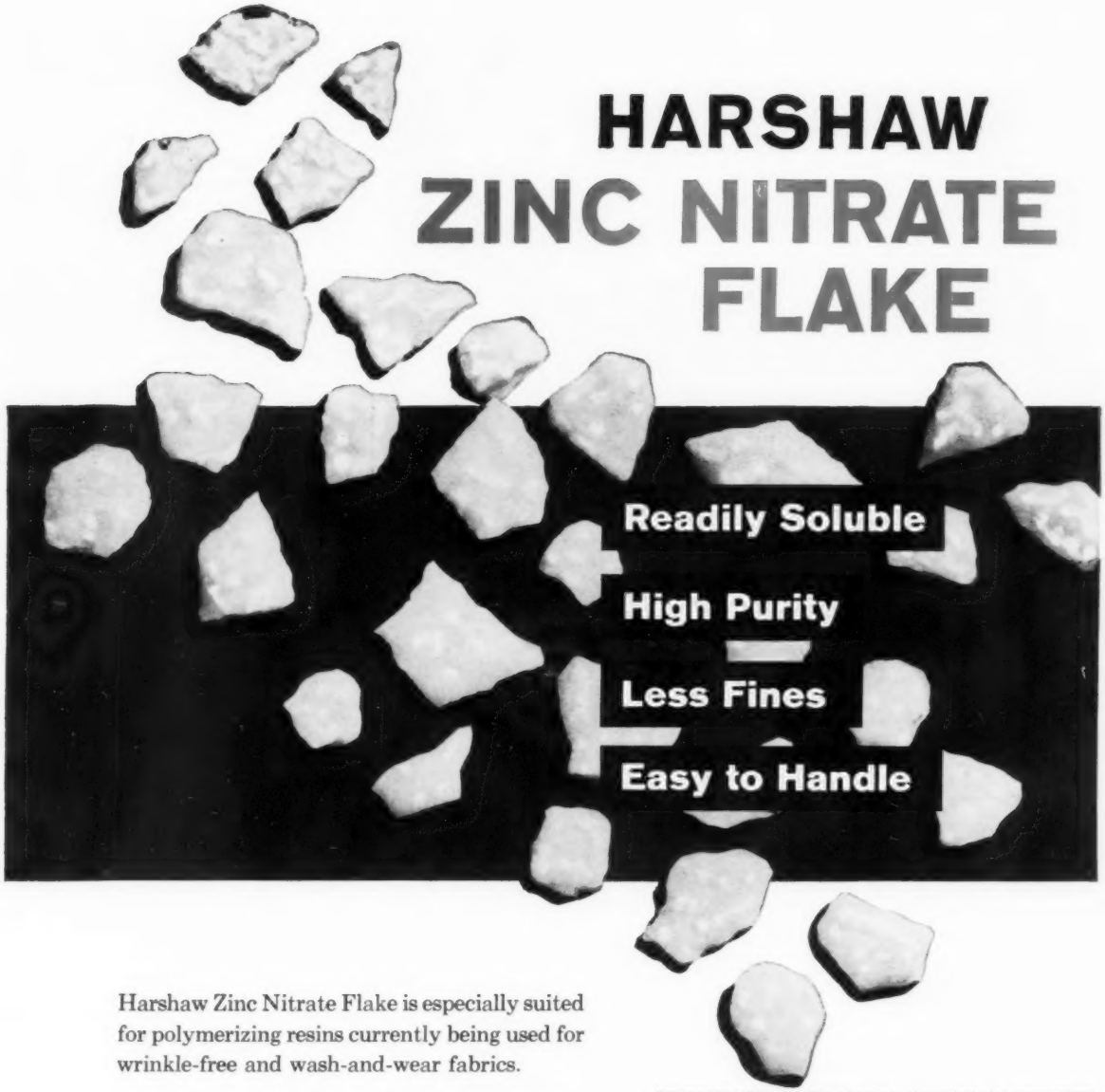
SPEAKS LUREX® FOR ITSELF

In texture versatility. Many are the textures possible with Lurex. Because of the feeling of dimension which Lurex contributes, unusual textural effects can frequently be achieved on relatively basic weaves. On the other hand—thanks to its pliability, strength and high tensile properties—Lurex lends itself perfectly to intricate constructions and knitted textures. In texture versatility—as in color, luxury appeal, performance and customer acceptance—there is no substitute for Lurex.

In national advertising. Lurex is the metallic yarn backed by a vigorous store promotion plan, with consistent year-round consumer advertising in color. It is the yarn your customers know. They know it is the yarn *their* customers recognize. Feature the name that's known in metallic yarn: Lurex, non-tarnishing metallic yarn made only by the Yarn Division of

The Dow Chemical Company • Williamsburg, Virginia • New York: 350 Fifth Avenue

Berkeley, Calif. • Boston • Charlotte, N.C. • Chicago • Florence, S.C. • Philadelphia • Manufacturing Affiliates in Canada: William B. Stewart & Sons Ltd., Toronto and Montreal



Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

Harshaw Zinc Nitrate Flake is produced under rigid control assuring the user of uniform resin catalysis at all times.

Harshaw Zinc Nitrate Flake measures about $\frac{3}{32}$" thick by $\frac{1}{2}$" long, thereby reducing dust and fines to absolute minumum.

Packed in 300 or 100 pound Leverpak drums with polyethylene liner, Harshaw Zinc Nitrate Flake is available for immediate shipment. Write for samples and prices.

TYPICAL AVERAGE ANALYSIS:

Assay as $Zn(NO_3)_2 \cdot 4H_2O$	72.5%
Zn	24.6%
Fe	0.001%
Pb	0.003%
pH of 5% solution	5.2
Insol. in 1% Nitric Acid Solution	0.001%

THE HARSHAW CHEMICAL CO.
1945 E. 97th Street, Cleveland 6, Ohio

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HASTINGS-ON-HUDSON, N.Y. • HOUSTON • LOS ANGELES • PHILADELPHIA • PITTSBURGH

Fast, accurate yarn count . . .

with SHADOGRAPH® direct-reading scale

Model 4142 Shadograph, shown above, provides a fast, precise method of determining your yarn count number. Direct-reading feature eliminates use of conversion tables. Fully enclosed weigh pan is readily accessible through clear plastic door. Unaffected by air currents. Weight indication by a light projection system gives you a true chart reading. No parallax. Has a capacity capable of handling up to 250 grains which includes yarn count to No. 4. A simple, positive selector enables rapid selection of any one of five ranges. Write for Bulletin 3307.

FOR ACCURACY IN MICRONAIRE TEST

Model 4104-A, right, is precision-designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Dial is graduated with 1" of indicator travel equal to 15 grains, over and under. Write for Bulletin 3308.

SHADOGRAPH MODEL 4104-A

Visit us at the Textile Show

Exact Weight SCALES

THE EXACT WEIGHT SCALE CO.
922 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: P.O. Box 179, Station S, Toronto 18, Ont.

Sales and Service Coast to Coast

Find us in your local 'Yellow Pages'

BETTER QUALITY CONTROL . . . . . BETTER COST CONTROL

Shorts and Remnants

(Continued from page 30)

S.A.; Capitol Thread Co., N. Y. C.; **Earl H. Greene,** Asheboro, N. C.; American Enka Corp., Enka, N. C.; Eastman Chem. Products, Inc., N. Y.; Dow Chem. Co., Midland, Mich.; General Tire & Rubber Co., Akron, O.; Colton Chem. Co., Cleveland, O.; **Kenneth Masser,** Supv., Kanmak Mills, Inc., Kulpmont, Pa.; Alco Oil & Chem. Corp., Phila. Pa.; **Richard LeB. Bowen, Jr.,** Pres. & Treas., Coated Textile Mills, Inc., Pawtucket, R. I.; **Howard Barrowclough,** Berkshire Hathaway, Inc., Providence, R. I.; Wyandotte (Mich.) Chemicals Corp.; **Carroll E. Chandler,** E. I. du Pont de Nemours & Co., Waynesboro, Va.; **V. S. B. Corbett,** Mgr., Canadian Cottons, Ltd., Hamilton, Ont., Can.; **E. G. Drake,** Canadian Industries, Ltd., Kingston, Ont., Can.; **C. R. Teichgraber,** Tech. Supv., Domil Ltd., Montreal, Can.; **Ing. Enrique Meyer Orozco,** Textiles Monterrey (Mex.) S.A.; **Ing. Lorenzo Garcia,** Mexico, D. F.; **C. H. Coghill,** H. B. Dickie, Ltd., Yarraville, Australia; **A. D. J. Piesse,** Ch. Chem., Bruck Mills (Australia) Ltd., Wangaratta, Vic.; Promaco, Mulhouse France; Hanfwerke Fussen - Immenstadt A. G., Fussen (Bayern) Germany; Research Inst. for Spinning Mills K.N.K.S., Hengelo, Holland; **Z. K. Sung,** Mgr., Pao Hsing Cotton Mill, Ltd., Hong Kong; **Walter Stein,** Mgr. Weaving, "ATA" Textile Co., Ltd., Haifa, Israel; **S. K. Sharma,** Weaving Master, R. S. R. G. Mohla Mills, Ltd., Akola, Barar, India; **Olle Wikstrom,** Boras Wafveri Aktiebolag, Boras, Sweden; **J. P. Grochmal,** Dawbarn Bros., Inc., Waynesboro, Va.; **Harold King,** Spofford Mills, Inc., Wilmington, N. C.; **Evan V. Quin,** Pres. Unistel Textile Mach. Corp., Port Chester, N. Y.; **Lennart Ander,** Quito, Ecuador; **A. A. Bebianno,** Dir., Cia Nac, de Tecidos Nova America, Rio de Janeiro, Brazil; Bradford Cotton Mills, Ltd., Camperdown, N.S.W., Australia; Gebruder Sucker, G.M.B.H., M. Gladbach, Rhld, Germany; **Ing. Rene Ojeda,** Dir., La Corona, S.A., Puebla, Mex.; **H. Jackson Sherertz,** Amer. Viscose Corp., Meadville, Pa.; **Primo Aliverti,** C.I.T.A., La Plata, Argentina; **P. L. Lim,** V.P., Universal Textile Mills, Inc., Manila, P. I.; **Elliott P. Cleveland,** Tehran, Iran; **Thomas Alvarez,** Cie Ind. Rio Bravo, C. Juarez, Mex.; **T. G. Chaudhari,** Empress Mill, Nagpur, Bombay, India; **Charles Crumpton,** Res. Sup., The Springs Cotton

Super-refining packs extra Color Value into this outstanding vat!

CARBANTHRENE®

BLUE BCF

SINGLE PASTE

New conditioning techniques developed by National Aniline research made this vat dye outstanding for pigment impregnation!

Its exceptional dispersibility . . . with a minimum of filterable insolubles and more efficient use of the dye . . . yields substantially better color value and cleaner dyeings.

Piece goods dye level and free of speckiness. There is little or no tendency to build up on the sides of packages and beams . . . penetration is thorough and even. Waste, rejects and redyes are at a new low.

If you haven't as yet tried the "new", improved CARBANTHRENES, this is a good one to try first. Write National Aniline for a sample today.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco Toronto

Allied Chemical

Tennant-maintained floor in carding department of a large southern mill

Only the TENNANT System can keep your floors this clean

Chances are that your floors *can* look like this the year around . . . *if* you use the TENNANT SYSTEM.

And your maintenance costs will usually run less per year!

Floor seals last longer. Newly-developed TENNANT Floor Seals, specially designed for textile mills, last longer than any comparable materials we know of. This ends need for frequent recoating and reduces annual maintenance costs.

Makes floors easier to clean. The exclusive TENNANT process *actually increases dirt-resistance of the average textile mill floor by 300%.* Soilage wipes off easily . . . in a fraction of the usual time.

Keeps floors bright. The TENNANT SYSTEM's exclusive cleaning techniques make it easy to keep your floor attractive month-after-month . . . even under heavy traffic.

You'll also enjoy added benefits in improved safety and employee efficiency when your mill is a bright, pleasant place to work in.

Your TENNANT Man is a qualified floor expert, ready to give free estimate of savings possible in *your* mill. For full information, write G. H. Tennant Co., 737K N. Lilac Drive, Minneapolis 22, Minn.

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

Shorts and Remnants

Mills, Lancaster, S. C., etc., etc.

So much for "Warp Sizing." If you don't get your copy before they run out, don't say we didn't tell you about it.

► The July issue of **"The Westpointer"** of West Point (Ga.) Mfg. Co. has an interesting section on "What's Ahead For America and Textiles." We believe quotes from Pres. **Joe Lanier** are worth reprinting here. In part he says:

" . . . So, looking ahead for textiles, I see some improvement in volume starting this summer or early fall. But under highly competitive conditions. The price, quality, and delivery must be right. Otherwise we will not get our full share of the business.

"For the more distant future I see opportunities for new and improved products making use of the new fibers and finishes. I see a better demand based on the needs of more people for better textiles. I feel that the price for cotton fiber will become more competitive with the man-made fibers. . .

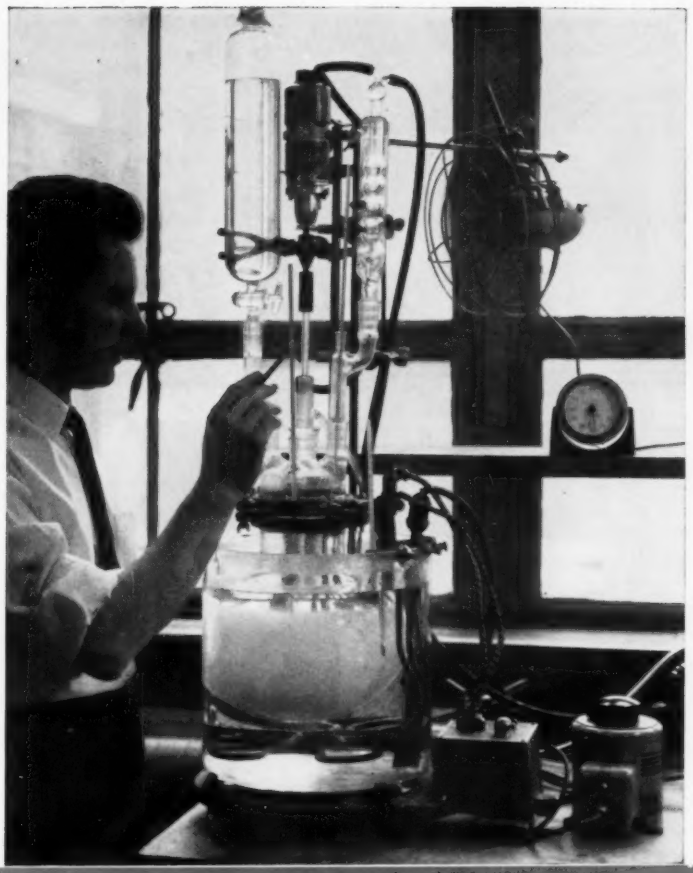
"I feel that we have a great future in textiles. I am confident that our children and our children's children can find rich rewards and satisfaction in this the oldest of all industries."

► And a recent news headline says "Congress Eyes Fish, Textiles." Sometimes during the past year or so textiles may have been something of a "Kettle of Fish." Also we guess that Federal trade policies have been unfavorable for both fishing and textiles, but there's a funny combination for you.

► And we will admit that a statement to a Congressional committee by Wm. Pollock, Pres., Textile Workers' Union, is "fishy." He says textiles could stand some higher import tariffs, an even break with foreign mills on U.S.A. cotton, and maybe some stock piling for armed services in low points, *but what they really need*, and we quote Mr. Pollock, is "to put employees on 30-hour week and pay the same as for 40 hours." If you can figure out how to pay more wages for less work and make more money, we'd say you've got it made.

► Since S&R has run down, let's say for September, "We got it made." See you later.

Houghton Technical Service for Textile Processing



Where to find New, Easier-to-use Emulsion Polymers

You get the benefits of the ultra-precise emulsion polymer chemistry you see here. This is how new, modern warp sizes, finishes and binders are created.

This particular apparatus produces the emulsion polymers that are stable and easy to use . . . and second to none in the results they produce in textile mills and finishing plants.

This advanced work in emulsion polymer chemistry is just one phase of Houghton's service to the textile industry. Houghton's service is *complete*, covering the full range of textile processing and finishing operations.

That's why textile processing problems usually get solved—in a hurry—when you call on Houghton. Get the latest information on new Houghton textile products by calling the Houghton Man in your area. Or write for full information on both products and Houghton Technical Service. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

BINDERS, WARP SIZES and FINISHES

. . . products of

E. F. HOUGHTON & CO.

PHILADELPHIA • CHICAGO • DETROIT • SAN FRANCISCO

Ready to give you on-the-job service . . .

Textile people are talking about . . .

Emulsifiable A-C® Polyethylene

best for finishes!

"I'm getting wash and wear finish advantages with A-C Polyethylene I never dreamed possible . . . and all at a *low finishing cost!*"

"I'm getting higher abrasion resistance, increased tear strength and improved sewability, to name only a few advantages. I'm 'sold' on A-C Polyethylene compounded finishes!"

"I like A-C Polyethylene because I can use it on *anything*: Blends, Wool, Rayon, Silk, Acetate, Orlon, Dacron, other Synthetics, Cotton—anything!"

"I like the reduced needle cutting, better lubricating qualities and non-chlorine retention features of A-C Polyethylene."

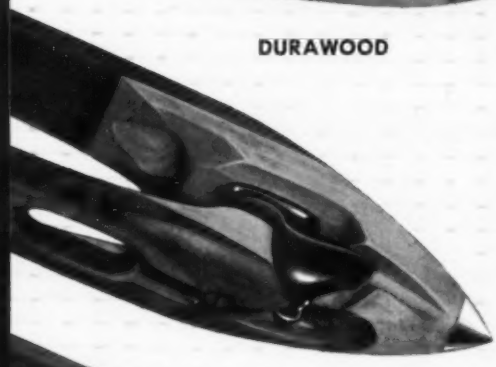
"I used to think all polyethylenes were the same but tests prove that Emulsifiable A-C Polyethylene for finishes is in a class by itself. It makes high concentrates, a small particle size and storage-stable emulsions."

SEMET-SOLVAY PETROCHEMICAL DIVISION
DEPT. 523-AW, 40 RECTOR STREET
NEW YORK 6, NEW YORK

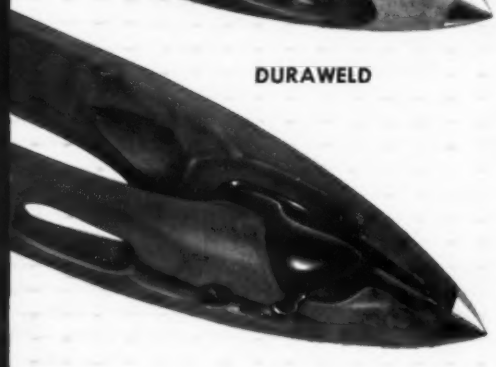
Allied Chemical

TEMPERED DOGWOOD

DURAWOOD



DURAWELD



DURAMOLD

Southern Quality Shuttles

Cost Less In The Long Run

Southern Shuttles are the answer to demands by textile mill men for longer, trouble-free shuttle life and better quality weaving. Here are examples of Southern's Quality line.

TEMPERED DOGWOOD—The finest natural wood shuttles treated with Southern's exclusive tempering process, making them extremely tough, wear-resistant and stable.

DURAWOOD—Southern's Tempered Dogwood shuttles further improved by an exclusive process of compression under heat. They are longer lasting, fracture-resistant, and slightly denser. They provide 50% greater life expectancy at a very nominal additional cost.

DURAWELD—These shuttles offer 100% longer life expectancy with a very moderate weight increase. Greater strength is assured through use of tempered dogwood end blocks for resiliency and tip retention, permanently bonded by an exclusive Southern method to long wearing wall sections of laminated wood or plastic.

DURAMOLD—Made of Westinghouse Micarta, remarkably strong, grainless molded plastic. Duramold shuttles last 3 to 4 times longer than natural wood shuttles, require less maintenance, reduce down time and weave better cloth. These are absolutely the finest shuttles on the market today.

SOUTHERN has a complete line of shuttles for you to select from—any size, any shape, any type, for any loom. You name it—Southern has it. Many standard sizes are in stock for immediate delivery.

World's largest manufacturer of all type Shuttles. Comparison made them famous.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

TEMPERED · QUALITY Stehedco CONTROL · STEHIDE

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

CHEMICALS for better, brighter fabrics

The law of the market place: Poor product, poor profit-and-loss statement. So anything that helps textile finishers turn out better fabrics has real meaning for the industry. Chemicals discussed here can help you send to market textiles that will build a reputation for superiority. If the problem is iron deposits on apparel fabrics, heat-sealing of rug coating, wrinkling in cotton—or any of several others—there is information here of interest to every profit-minded textile man.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

Route to:

_____

_____

_____

_____

IRON STAINS LICKED

by new TEA formula

Streaks and stains can mar your profit picture just as surely as they mar your fabrics. Here's help in eliminating them. Triethanolamine (chelation grade) is easy to handle, low in cost, and knocks ferric iron right out of the picture.

The profit-conscious plant manager (and that means just about everyone in the business) will be happy to know that chelation under high pH conditions can be effected at lowest cost with chelation grade triethanolamine (TEA).

Chelating agents, of course, have been important to all branches of the textile industry for a long time. Versatile Versene® products, for example, while extremely effective in so many applications, are not as effective in high pH systems. In kier boiling operations or scouring with caustic soda, TEA provides a perfect solution to problems of iron deposit staining.

Used either by itself or in combination with Versene products, TEA keeps cotton cloth unstained and unweakened by reacting with ferric iron to form a stable chelate structure. Precipitation of highly insoluble ferric hydroxides is eliminated. This is doubly important in view of the fact that these deposits on cotton cloth not only cause stains but make any subsequent dyeing or bleaching operation extremely ineffective. They catalyze the decomposition of peroxide to such an extent that oxy-cellulose is formed, weakening the fabric.

Not the least of triethanolamine's advantages is that it also functions as an emulsifier, which means, of course, that it will prevent any insolubles from being re-deposited on the cloth.

Available from Dow or many of its distributors, specially prepared TEA has a much lower freezing point than triethanolamine which has not been thus prepared. It flows readily at normal plant storage temperatures and will not become solid until temperatures drop to 35°F.

News briefs about other Dow chemicals

FOR THE TEXTILE INDUSTRY

CAUSTIC SODA

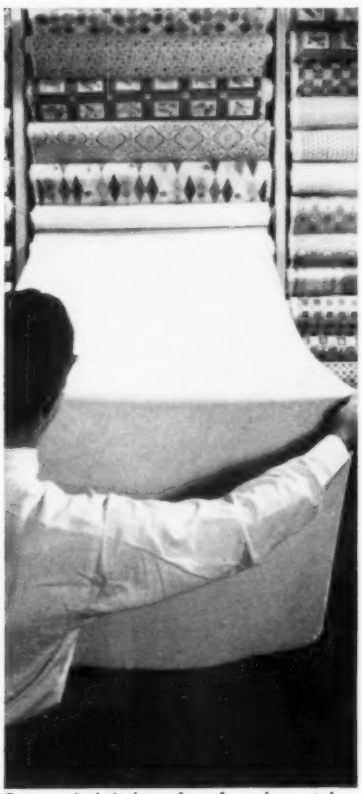
New 86-page handbook gives comprehensive information on handling and storage, analysis methods. Graphs, tables, nomographs.

DOWICIDE® A

Added to starch sizing, it prevents starch breakdown in vats and mildew damage in gray goods, eliminates increased bleaching cost due to mildew.

TEA's low molecular weight means that it will chelate greater quantities of iron per pound than other chelating agents. In combination with Versene or other such agents, it provides maximum chelation over a wide pH range.

Importance of chelating agents. Dow's belief in the importance of chelating agents has led to construction of new Texas plant facilities where the industry's widest line of chelating agents is produced. Dow is determined to make chelating agents available to all at attractive prices.



Cotton cloth is kept free from iron stains with TEA.

METHOCEL . . .
Answer to latex thickening problems

Wherever a latex thickening problem exists, chances are there is a Methocel® product ready to do the job. Methocel products do more than thicken . . . they control uniformity and weight of the coating . . . act as protective colloid in the latex itself. Methocel products are non-ionic and are compatible with most dyes used in formulations.

Methocel products also have value as emulsion stabilizers and viscosity control agents in inks used on printed fabrics. They thus control the consistency of the ink for smooth, even printing.

Investigate these two bright new stars in the Methocel group: 60 HG for emulsion stability; 90 HG, 15,000 cps., for efficient thickening.

Methocel controls uniformity and weight of latex, acts as protective colloid.

EDA 98%, a Dow exclusive, goes into resins for high wrinkle-resistance.

WRINKLE RESISTANCE . . .
Get it with ethylenediamine resins

Since the early '50s, resins made with ethylenediamine have been used for treating finished cotton. Now, a quality and a purity never before achieved make EDA 98%, a product pioneered by The Dow Chemical Company, the ideal base for such resins. Cotton finishers in ever-increasing numbers are finding that resins made with EDA 98% make fabrics highly resistant to wrinkling, as well as providing excellent wrinkle recovery properties. In addition, it means improved dimensional stability and storage stability, plus high color retention in the finished cotton fabrics.

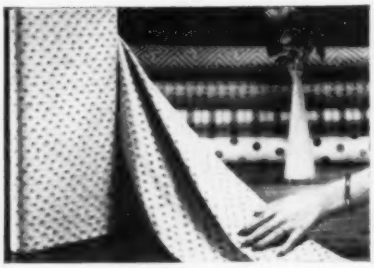
Dow patents reflect the many years of research which have made possible this greatly improved ethylenediamine. The result: resins which are lighter in color. For the first time, they can now be used to treat pastel and white cotton fabrics, opening up the important "dress-up" market, including dress shirts, blouses, women's skirts and the like.

★ ★ ★ ★

If you're puzzled about how to improve your present operation, make it more productive or more economical, why not consult with Dow chemists? They'll be happy to discuss your problems with you and suggest possible solutions. Write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 774T.

POLYOLS

Send for folder, "World's Widest Line of Polyols". Dow offers fastest delivery of the right polyol for the right job, is constantly developing promising new polyols.



DOWANOL®

Largest and most complete line of glycol ether solvents for dyeing purposes. Folder and new booklet on Dowanol products available on request.

Dow chemicals basic to the textile industry

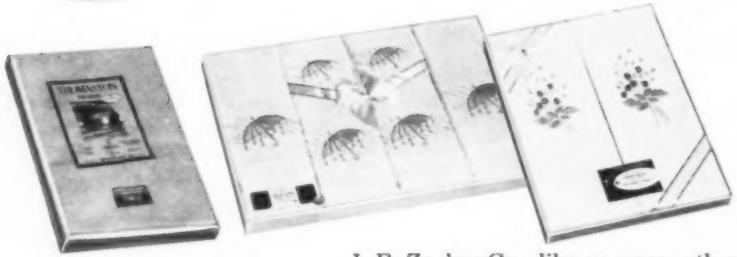
Glycol Ethers • Alkalies
Thickeners • Industrial Glycols
Glycerine • Chelating Agents
Ion Exchange Resins • Preservatives
Solvents • Polyols

YOU CAN DEPEND ON

DOW

HAYSSEN
WRAPS AUTOMATICALLY...
with ALL PLASTIC FILMS!

J. F. Zucker Co. wraps sheets, pillow cases, towels and towel sets, etc., on their new Hayssen.



J. F. Zucker Co., like so many other Textile people, has taken advantage of new low-cost plastic films teamed with economical Hayssen automatic wrapping to give them the ultimate in finer protective packaging.

Hayssen is the only proven machine to successfully overwrap in polyethylene without cards, boxes or trays.

Hayssen offers the greatest savings in material, labor and handling while producing the smoothest, most sales appealing package.

Let our experienced packaging engineers help you with your packaging problems. Contact us today!

HAYSSEN
MANUFACTURING COMPANY
Dept. TI-9 • Sheboygan, Wis.
first in Automatic Packaging Since 1910
Atlanta • Boston • Chicago • Denver • Detroit • Jackson, Miss. • Kansas City • Los Angeles
Minneapolis • New York • Philadelphia • St. Louis • San Francisco • Montreal • Toronto • Vancouver

What the TEXTILE MILLS are doing

Abney Mills has completed plans for the consolidation and expansion of its dyeing and finishing operations. Facilities of the Gossett Dyeing and Finishing Plant, Anderson, S. C., have been consolidated with Renfrew Bleachery at Travelers Rest, S. C., and the Gossett plant has been closed. New machinery and equipment installations, to be completed late this year, will be housed in additional buildings to be constructed at Renfrew. The enlarged operation at Renfrew will be greater than the combined facilities of the two plants.

Now available to serve personnel of the Willimantic, Conn., mills of **The American Thread Co.** is a new medical center, which combines into one operation the former medical departments of Mills 1 and 4. The new facilities—consisting of a two-bed hospital, dispensary, nurse's office and record room, doctor's office, and waiting room—are centrally located and more accessible than in the past. * * * In line with the company's continuing equipment modernization program, two new combers have been installed in the Troutman, N. C., plant. Besides the new units, three combers have been transferred to Troutman from the Dalton, Ga., mill. * * * The Troutman plant arouses employee interest in safety by means of a monthly contest. A question about plant safety is composed by the safety committee, and addressed to the first of five employees whose names are drawn at random. If he answers correctly, he receives a prize. If he cannot answer, the question is asked the employee whose name was drawn next, and so on until the question is answered. * * * Evenness testing equipment has been installed in the company's plants at Willimantic, Dalton, and Clover, S. C.

Burlington Industries, Inc., has announced that Burlington Hosiery Mills (S.A.) Ltd. is scheduled to begin operations in the fall at its Diepriviere, South Africa, location. Women's full-fashioned and seamless hose (both conventional and stretch styles) will be produced, utilizing American manufacturing techniques. * * * Burlington Industries has sold approximately 350 houses located in villages of the company's recently

OIL IS SUPPLIED TO BOTH TOP AND CONICAL BEARING SURFACES THROUGH SEAMS.
LESS OIL IS NEEDED.
TRAVELER DISTRIBUTES OIL.
OIL FLOWS TO ANNULAR RESERVOIR WITHIN THE RING, THEN IS DRAWN BY CAPILLARY ACTION THROUGH SEAMS.

New..."M" type HERR Conical Ring

better lubrication with less oil

SEAM LUBRICATION. A new idea . . . utilizes the principle of capillary attraction to provide more uniform lubrication than has been possible in the past. It is the outstanding feature of the new "M" type ring.

SEVERAL YEARS EXPERIENCE IN SOME OF THE LARGEST TEXTILE PLANTS HAVE ESTABLISHED THE BENEFITS OF THIS RING.

See us at the Southern Textile Exposition — Booth 267

1. **LESS OIL IS USED IN THIS NEW "M" TYPE RING** because no oil is wasted. It all goes to the bearing surfaces of the ring through the seams.
2. **TRAVELERS LAST LONGER.** As a matter of experience in mills which have been using "M" rings for the past three years, the uniformity of lubrication increases traveler life.
3. **RINGS LAST YEARS LONGER.** High speed operation for years has established the superiority of the new design.
4. **CLEANER YARN.** With better oil distribution and no leakage, mills are getting cleaner yarns.
5. **FASTER OPERATION.** Speed-up is possible without extra wear to ring and traveler. The traveler receives oil from the lubricating seams over the complete bearing surfaces of the ring.
6. **REDUCES YARN BREAKAGE.** As in all Herr Conical Rings, tension is automatically adjusted by the action of the traveler and conical design of the ring.

Write today — get facts that will make new profits possible.

The 5½" diameter 45/64" face Herr Conical Ring requires only one oil cup.

HERR® MANUFACTURING CO., INC.

310 FRANKLIN STREET • BUFFALO 2, N. Y.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

STATIC

Now its elimination is *guaranteed* . . . with the SIMCO *"Midget"*. It is the most effective static eliminator available, for *all* textile applications. Yet, it is perfectly safe and its cost of operation is negligible. Write for facts.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

Halsey® Taylor . . the most modern line of drinking-water equipment you can buy

No. 5651—Ultra-modern recessed type, Vitreous China, self-closing stop, push-button glass filler. Two-stream projector, automatic stream control.

No. 5623—Streamlined face-mounted drinking fountain, heavy vitreous china, integral trap housing, concealed wall hanger. Two-stream mound-building projector and Halsey Taylor automatic stream control.

No. 5616—Face-mounted, vitreous china. Same specifications as No. 5623, except has 16" back wall face height.

No. 5601—Face-mounted, vitreous china. Same specifications as No. 5623, except has 12" back wall face height.

No. 5702—Battery Type. Concealed hangers. Two separate union supply connectors with positive shut-off valves. Two two-stream projectors, automatic stream control.

Modern in Design . . .
TAYLORed for you!

You'll find Halsey Taylor Drinking Fountains modernly designed to blend harmoniously with individual interior decor! And, even more important, they are the products of a house devoted exclusively to the manufacture of quality drinking-water equipment.

The Halsey W. Taylor Co., Warren, O.

Halsey Taylor coolers, too, are available in wide variety—see latest catalog, or Sweets

90

What the TEXTILE MILLS are doing

acquired plants in Henrietta and Caroleen, N. C. Employees living in the houses were offered first chance at the purchases.

Carolina Throwing Co. has acquired property in Kings Mountain, N. C., on which it will construct a two-story addition. The new building will provide space for storage and production machinery.

The research and development div. of **Chemstrand Corp.**, Decatur, Ala., has received the National Safety Council's award of honor, the highest award for industrial safety. The division has completed over four years and nearly 3¼ million man-hours without a disabling injury.

Cone Mills Corp. has established a new operating unit, the Finishing Division, to tie together under one managing group all of the company's finishing activities.

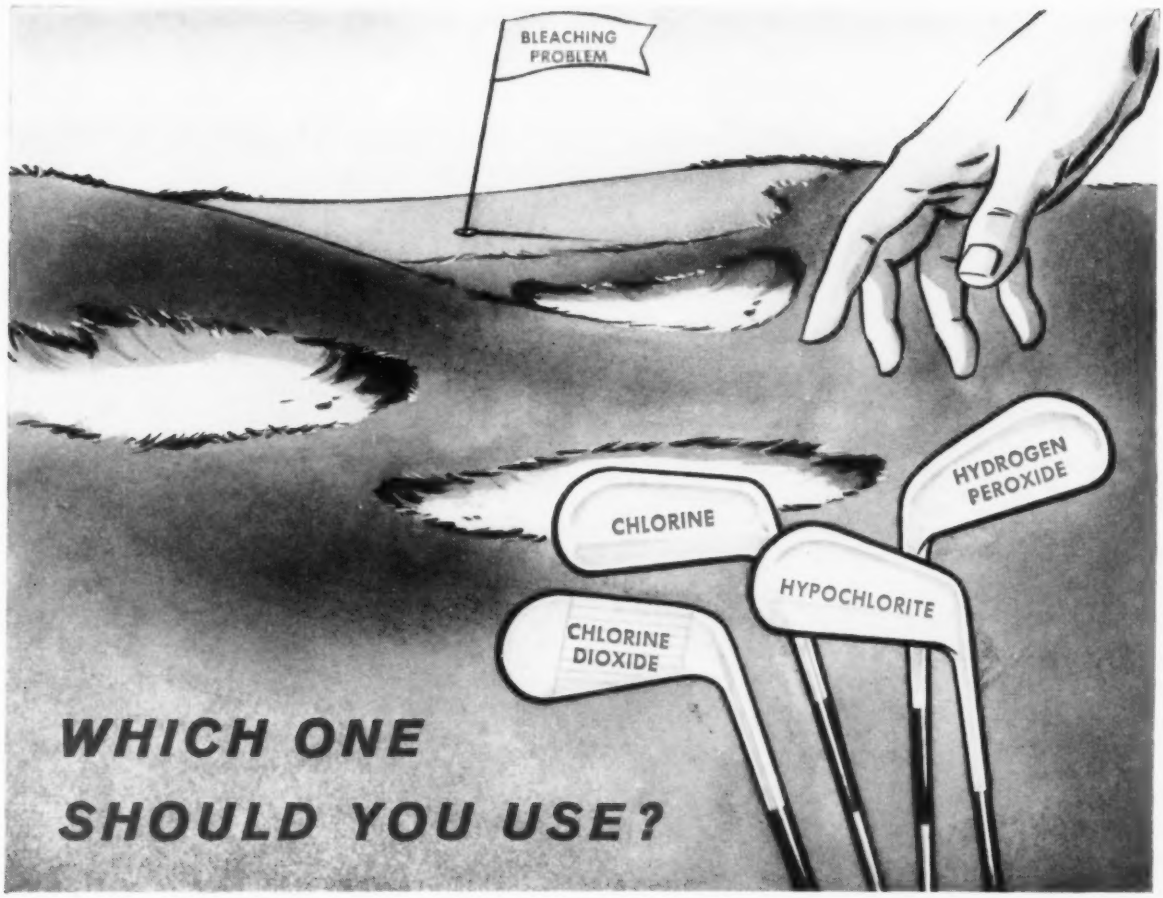
Anchor Rome Mills, Inc., the Rome, Ga., plant of **Dan River Mills, Inc.**, will be closed upon completion of present fabric orders. The "run-out" operation is expected to be completed in October, but some machinery will be stopped earlier as production commitments are fulfilled. Tentative plans call for removal of some of the machinery to other mills in the Alabama division, which includes the Rome plant, and to the company's headquarters in Danville, Va.

Occupation of additional space expands the production facilities of **Darlene Knitwear, Inc.**, in Puerto Rico, to more than 100,000 sq ft for the manufacture of textured yarns for sweaters. A training program, designed to alleviate a serious shortage of skilled personnel, is presently being conducted at the Island operation. The company also sponsors scholarships in engineering and business administration at local colleges.

The four New York City divisions of **Deering, Milliken & Co.** are now housed under one roof in the company's new eight-story building on Avenue of the Americas.

A new firm to manufacture decorative fabrics for homes has been organized in Burlington, N. C., by John

(Continued on page 48)



SOLVAY – with all 4 bleaching methods – can help you make the best choice

SOLVAY—the one producer offering all four bleaching methods—can give you objective guidance in choosing the method or methods best suited to your needs.

SOLVAY service also includes practical application aid by field technicians from our specialized, industry-wise Technical Service, authoritative literature and the research facilities of the nation's largest alkali laboratories.

All this is yours at no extra cost—with SOLVAY products that have established a 77-year tradition of quality leadership.

Sodium Nitrite • Calcium Chloride • Chlorine • Caustic Soda • Caustic Potash Chloroform • Potassium Carbonate • Sodium Bicarbonate • Vinyl Chloride • Methyl Chloride • Ammonium Chloride • Methylene Chloride • Monochlorobenzene Soda Ash • Para-dichlorobenzene • Ortho-dichlorobenzene • Carbon Tetrachloride Ammonium Bicarbonate • Snowflake® Crystals • Aluminum Chloride • Cleaning Compounds • Hydrogen Peroxide • Mutual Chromium Chemicals

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

SOLVAY branch offices and dealers are located in major centers from coast to coast.

Write now for literature or technical assistance

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N.Y.

BQ-98

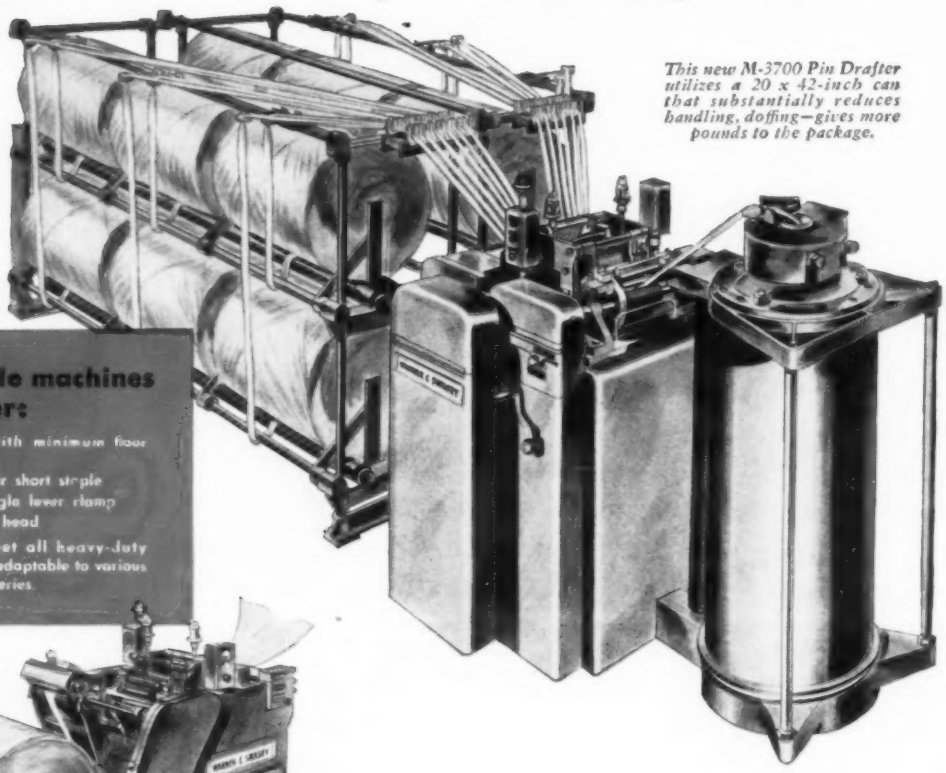
Please send me at no cost literature on:
☐ Chlorine ☐ Hydrogen Peroxide ☐ Hypochlorite

☐ Please have your representative contact me about my bleaching problem.

Name_____
Position_____
Company_____
Phone_____
Address_____
City_____ Zone____ State____

NEW WARNER & SWASEY WIDE SETOVER PIN DRAFTER® handles all your drawing needs

SEE IT IN OPERATION
BOOTH 834—ANNEX 5
20th Southern Textile Exposition
Greenville, S. C., Oct. 6—10

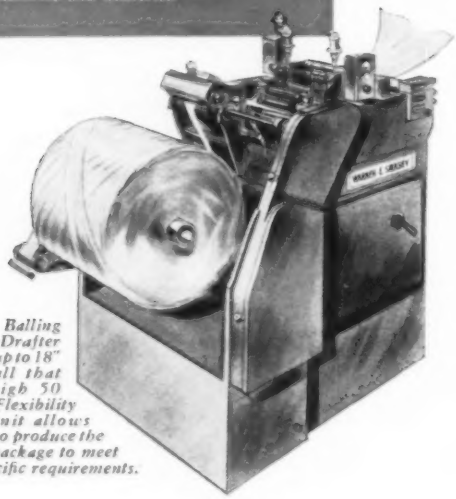


This new M-3700 Pin Drafter utilizes a 20 x 42-inch can that substantially reduces handling, doffing—gives more pounds to the package.

These versatile machines offer:

- High productivity with minimum floor space
- Close nip control for short staple
- Completely new single lever clamp
- Re-designed balling head

In addition they meet all heavy-duty requirements and are adaptable to various attachments and deliveries.



The new Balling Head Pin Drafter delivers up to 18" x 24" ball that may weigh 50 pounds. Flexibility of the unit allows the mill to produce the type of package to meet their specific requirements.

No matter where you are now using pin-controlled drawing equipment, a whole new field of profitable operation is opened up by the "all-purpose", versatile 8" wide setover Pin Drafter Intersecting Draw Frame. See your Warner & Swasey Field Engineer today for the complete story.

® Reg. U. S. Pat. Off.

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Cleveland
PRECISION MACHINERY SINCE 1880
TEXTILE MACHINERY DIVISION

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Suburban Square Bldg., Ardmore (Philadelphia), Pa.

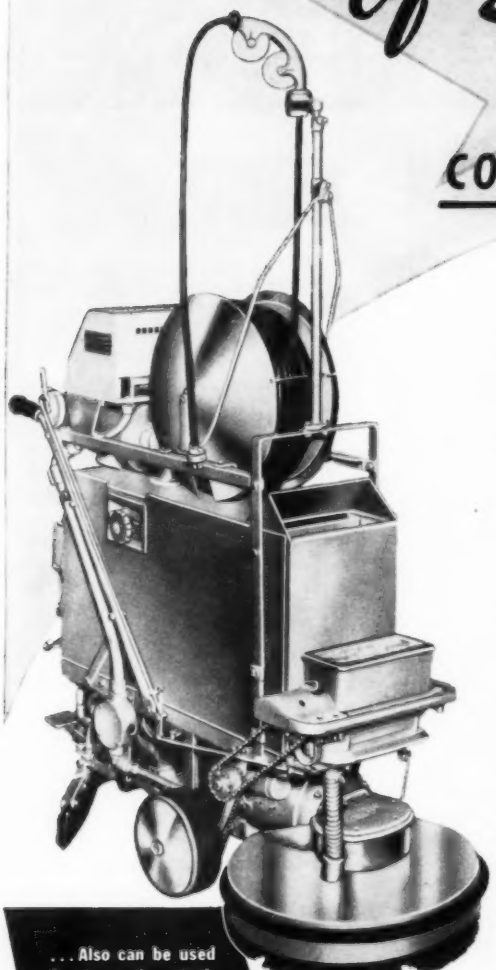
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

SMALL-AREA BUILDINGS...

Save 2/3 of Every Hour of Scrubbing Time

WITH A

COMBINATION SCRUBBER-VAC!



...Also can be used for dry work — steel-wooling, et cetera

(Powder Dispenser is an accessory)

Today, even buildings with but 2,000 to 15,000 sq. ft. of floor space can reap the labor-saving, cost-reducing benefits of *combination-machine-scrubbing*. Here's a *Combination Scrubber-Vac, Finnell's 418P* at left, that's specially designed for such buildings. This *electric* unit, with its 18-inch brush spread, cleans floors in *approximately one-third the time* required with a conventional 18-inch machine and separate vac.

The *418P* applies the cleanser, scrubs, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans... and the features that make the machine simple to operate. It's *self-propelled,* and has a *positive* clutch. There are no switches to set for *fast* or *slow*— slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Compactly built, the *418P* also serves advantageously in larger buildings for the care of floors in narrow aisles and congested areas, and is available on lease or purchase plan.

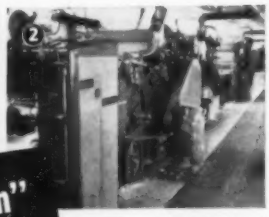
Finnell makes *Scrubber-Vac Machines* for small, vast, and intermediate operations, and in *gasoline* or *propane powered* as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that *a Finnell Floor Specialist and Engineer is nearby* to help train your maintenance operators in the proper use of the machine and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., [illegible] East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

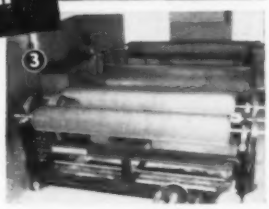
Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

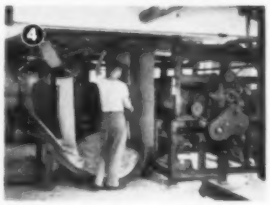


D&F "Coordinated Production"

. . . Proves Profitable for Packard Mills

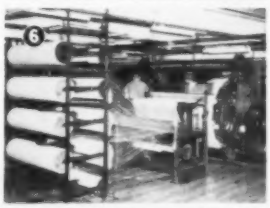


At Packard Mills in Webster, Massachusetts, where quality rates high, Packard men have learned over the years to count on D&F "Coordinated Production" machinery to make every possible phase of production profitable.



In producing fine cloth, each of these D&F products plays an important part: (1) D&F Spinning Frames, (2) D&F cards, (3) D&F Traverse Grinders, (4) D&F Nappers, (5) D&F Pickers, (6) D&F Dressing Equipment, (7) D&F Dusters, D&F Spare Parts, D&F Supplies of Condenser Tapes & Aprons and Card Clothing. Each contributes to high quality, production and efficiency — when properly specified and used. The Advice, Counsel, and Service of D&F Technicians help to fulfill these conditions.

This is the D&F "Coordinated Production" Package Plan for textile mills. Mills following this plan can always rely on Davis & Furber (as the one overall source of supply) to help solve mill production problems.



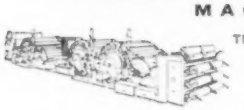
New mills being planned, or existing mills considering expansion, are taking advantage of the D&F "Coordinated Production" Package Plan. You are invited to investigate it in whole or in part. There is no obligation.

Begin with a request for a D&F "Coordinated Production" in-the-mill survey. The confidential study and analysis that results often produces recommendations which can tie D&F right into your production requirements. At the same time, D&F will recommend any accessories, spare parts or supplies that may be needed.

For *new-plant quality and yield*, for modernization of existing equipment, for properly specified accessories and supplies, for production that can deliver profits — call on Davis & Furber, North Andover, or Charlotte.

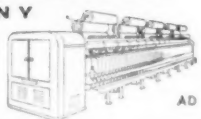
DAVIS & FURBER

MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS

North Andover, Mass.
Charlotte, North Carolina



AD 12-5

Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

What the TEXTILE MILLS are doing

(Continued from page 44)

A. Boland, Jr., Hubert Marshall, and Walter Horne. Located in a new building, the plant will have 10 Jacquard looms. Employees will number 100 to 125.

Holt Hosiery Mills, Inc., Burlington, N. C., is reported to have enlarged its plant and added 60 seamless hosiery machines.

In an expansion move, **Graham (N. C.) Hosiery Mills, Inc.,** has added 12 new seamless hosiery machines.

Sellers Hosiery Mills, Inc., Burlington, N. C., has added 60 new seamless hosiery machines.

All of the machinery of the Clinton, Mass., plant of the **Bell Co.** is to be sold. According to a company official, the machinery in the Clinton mill is all surplus. Weaving and spinning operations will be continued in the Stony Point, N. C., plant, he said, and finishing will be done in the Woonsocket, R. I., plant.

Nebel Knitting Co., Charlotte, N. C., reports that it has invested $1 million in new machinery and equipment. Largely directed to seamless hosiery knitting, the expansion program is scheduled for completion in October. To date, the program has upped the number of employees to 425. The modernization program included automatic equipment for the full-fashioned hosiery knitting machines to increase operating efficiency. The firm expects to continue production of full-fashioned hosiery in relatively large volume along with the increasing output of seamless stockings.

Fulton Bag & Cotton Mills, Atlanta, Ga., has engineered a fabric to aid a bedding manufacturer in overcoming in-plant glare. The bedding manufacturer was receiving complaints of eyestrain from employees applying cotton mesh fabric insulator over bedsprings. Investigation revealed that strain occurred when there was glare through windows from snow or bright sunlight and that it was limited to people whose work caused them to watch the white open mesh insulator in motion. Fulton Bag provided a light green mesh at no extra cost and completely stopped the trouble.

(Continued on page 193)

Ring Twisting or Uptwisting . . . WHITIN has the Twister for you!

To provide precisely the right twister for maximum production, highest quality twisting, on the largest practical package to secure knot-free yarns, Whitin manufactures 49 models of ring and uptwisters. Whitin can supply the type and model most suitable for any twisting need for natural and synthetic fibers.

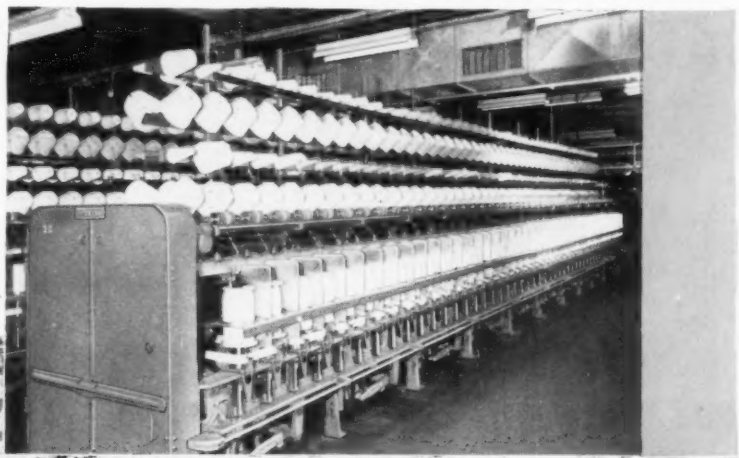
The machines illustrated here are widely used by leading mills in the production of coarse yarns for carpets and tufted rugs; they have also made outstanding records in the tire cord and paper yarn industries. All Whitin Twisters and accessory machines are advanced in design, rigid in construction and precision built.

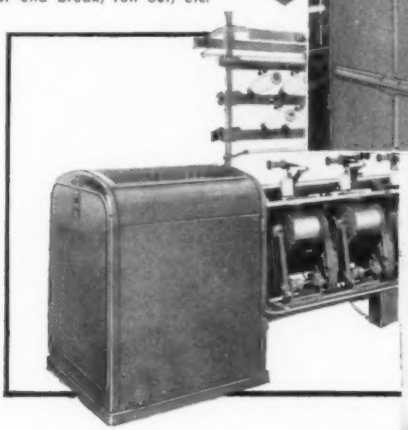
COMMODORE* RING TWISTER

For wet or dry twisting, the Commodore is available in gauges from 7" - 10", with rings ranging from 5½" - 8½" and, normally, with 92 or more spindles. Package weights are from 7.0 - 11.0 lbs. of knot-free plied yarn.

SPOOLMATIC* REDRAW DOUBLER with Electronic Slub Detectors

For winding one, two or more ends at 100 - 300 yds./min., package up to 9.0 lbs. This machine provides new scope for tufted rug or carpet yarns. Exclusive electronic slub detectors stop each winding position for end break, run out, etc.





CABLE-KING* UPTWISTER

Produces several types of take-up packages: headless, parallel-wound on paper tube; straight spool wind on double head bobbin; or cone wound on paper tube. Packages up to 9.0 lbs. and speeds up to 5250 RPM. Ideal for cabling nylon tire cord and other heavy industrial yarns.

Whitin CABLE-KING UPTWISTER is available in lengths of 60 - 120 spindles, 11" gauge.

*Trade mark

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

For every production run . . .

keep your weaving schedules on time

with Clinton Products

For every warp-sizing job, you can rely on Clinton corn starches. These products yield sizes with uniform viscosity that produce the same results every time, because:

CONSISTENT FORMULATION MAKES CLINTON PRODUCTS RELIABLE

Three analytical control laboratories and several single-purpose testing stations are located at strategic points in our plant. They check every stage in the processing of *all* products . . . they check *all* finished products to be sure specifications are met exactly. That's why you can depend on Clinton products to do the job for which they are needed.

Your Clinton salesman can help you select the right starches to produce the sizings you want. And, should you need special production advice, *prompt* technical service is available when you need it. Call your Clinton salesman today, or write:

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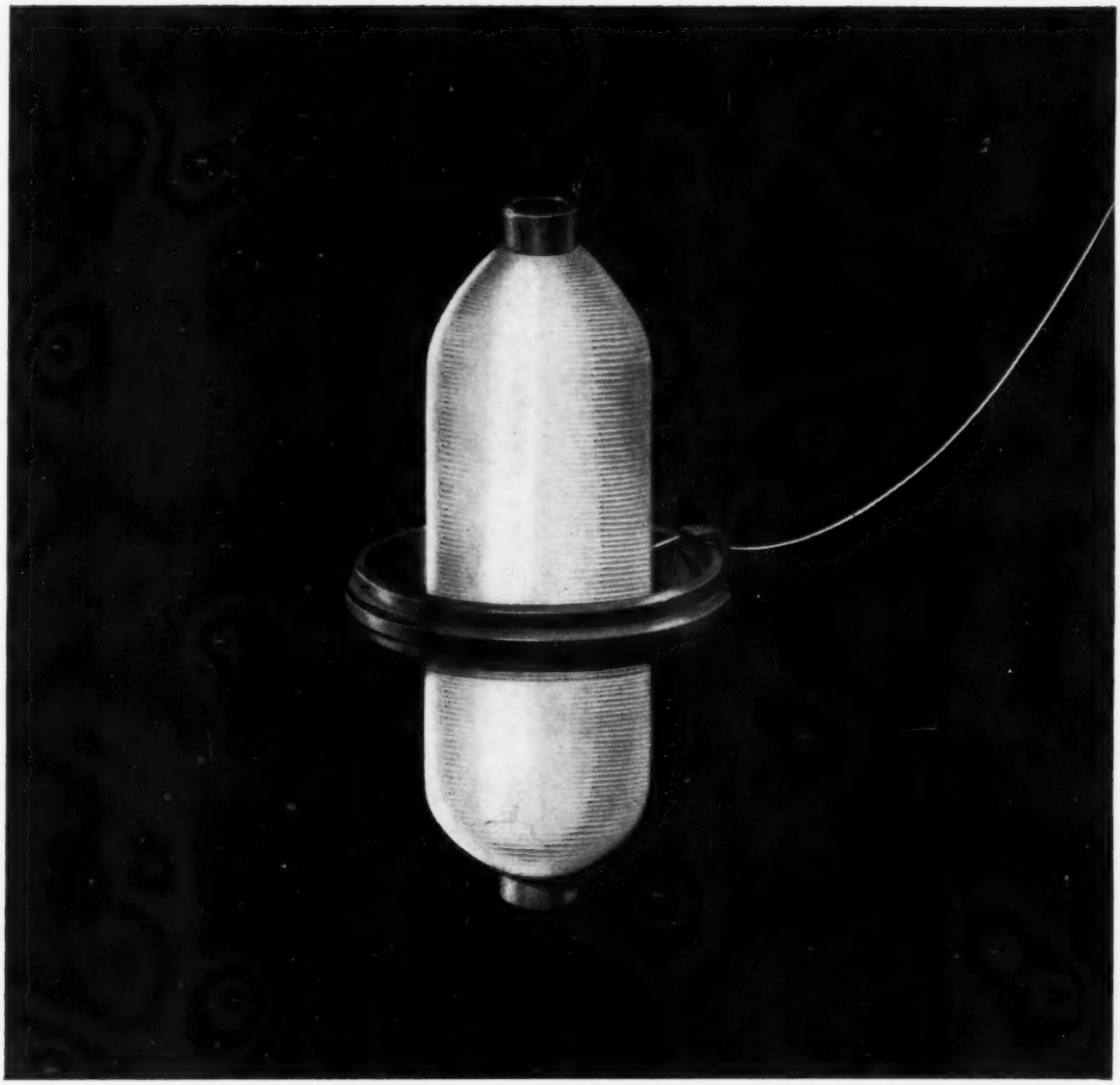
. . . Where research today improves tomorrow's product



reduce wear, lengthen life of spindle bearings

Spinesso is a premium-grade lubricating oil for both spinning and twister spindle bearings. Its exceptionally high oxidation stability affords maximum bearing protection – and extends the time between lubrications considerably. Spinesso's high resistance to oxidation inhibits the formation of dark, sludge-like deposits that cause friction in the bolster – and stain yarn.

Spinesso is specially processed to provide an extra measure of protection against wear and to materially reduce rusting and pitting. Thus the problems most frequently encountered in high-speed bearing operations in humid textile mill atmospheres are minimized. Spinesso gives positive protection at all times – even at start-up when immediate and effective lubrication is essential.

Textile mills that have switched to Spinesso report *cleaner, longer-lasting spindle bolsters and blades—with less frequent lubrication.*

Spinesso is available in *three* viscosity grades. Get the whole story on this fine product . . . contact your nearest Esso Standard Oil Co. Division Office: Boston; Pelham, N. Y.; Elizabeth, N. J.; Bala-Cynwyd, Pa.; Baltimore; Richmond; Charlotte; Memphis; New Orleans.

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PETROLEUM PRODUCTS

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". . . our Egyptian agent reports that the last batch of size was just right . . ."

Egypt, Chile, Cuba, or New England and Dixie, Seyco size is just right to fit your individual sizing problem.

And that's not all. Seyco service goes with Seyco size.

For 54 years we've manufactured textile chemical specialties, and thanks to the mills which used and still use them, we hope to be around for 54 more years.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

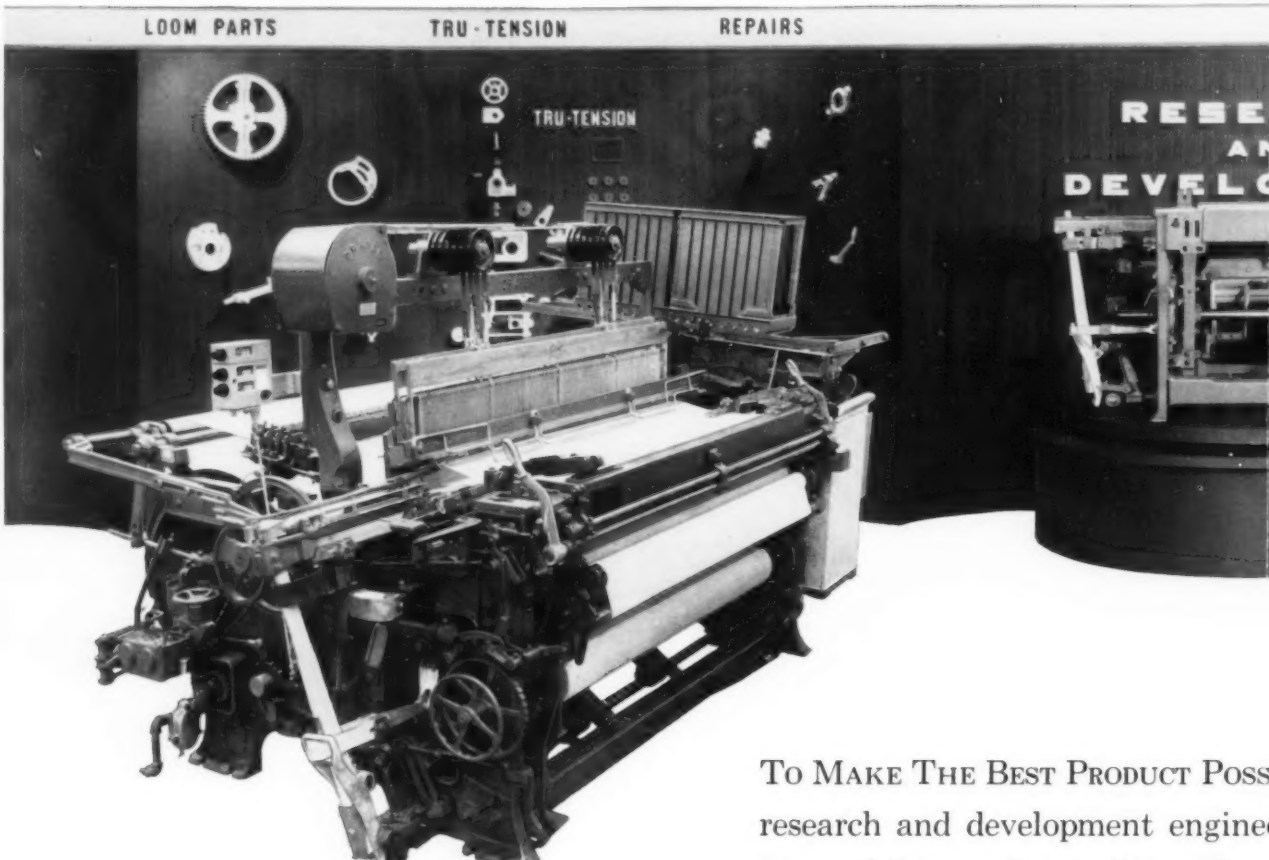
Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

SEYCO

748 RICE STREET, ATLANTA, GEORGIA

Expressing
to make the best



To Make The Best Product Poss
research and development engine
Our exhibit at Greenville will e
showcase for many new and impro

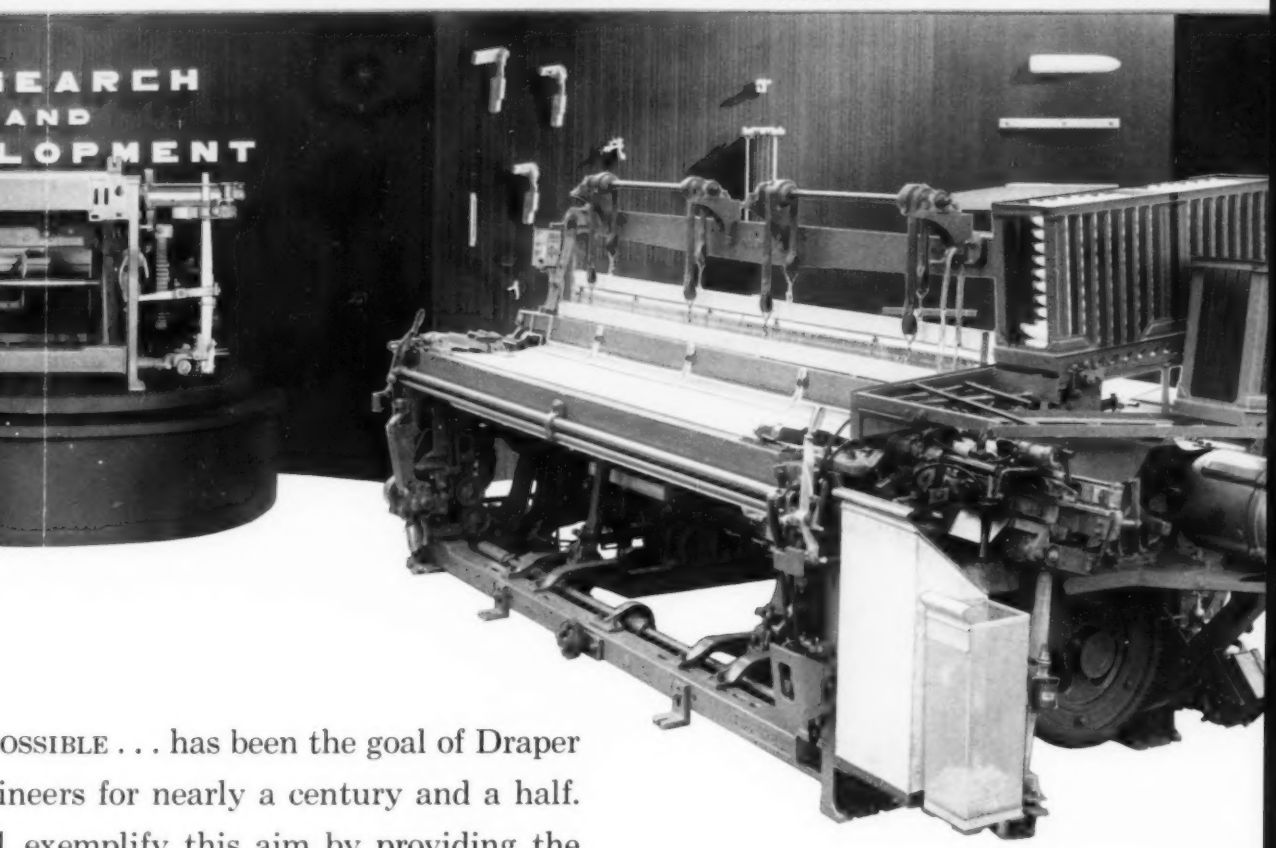
You are cordially invited to visit us at the Southern Textile Exposition, Greenville, South Carolina — October 6-10.

DRA

g an ideal...

t product possible!

TEMPLES ACCESSORIES WOOD PARTS



OSSIBLE . . . has been the goal of Draper
ineers for nearly a century and a half.
l exemplify this aim by providing the
proved Draper loom mechanisms.

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YOUR INVITATION . . .

to visit our exhibit at Greenville

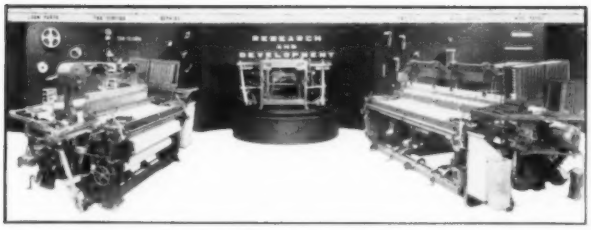
We cordially invite you to visit with us at the forthcoming Southern Textile Exposition, Greenville, South Carolina – October 6 thru 10.

This important Exposition provides us with the opportunity to renew old friendships and to personally show you the latest improvements in our products.

DRAPER CORPORATION

Hopedale, Massachusetts

Atlanta, Ga.
Greensboro, N.C.
Spartanburg, S.C.



Expressing an ideal . . . to make the best product possible!

Draper Corporation

Textile Industries
for September 1958

News in Brief

American Male Prefers Cotton and Woolen Cloth. U. S. Department of Agriculture researchers say a recent survey indicates that the American male definitely pre-

fers cotton fabrics for casual summer dress. The sum of the interviews showed that wool is the fiber most preferred in terms of ownership, preference, and recent purchase for summer suits and both summer and other season sport jackets. A copy of "Men's Preferences for Cotton, Wool, and Other Fibers in Selected Clothing Items," Marketing Research Report 244, may be obtained from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Favorable Outlook Seen for Textiles. Courts & Co.'s annual textile survey predicts that the second half of 1958 will show improved operations and earnings for a number of textile companies. The investment bankers base the prediction on the improved inventory situation and brighter demand outlook, plus the fact that domestic production, since the fall of 1957, has been more realistic in the light of market conditions. The report cautioned that this does not mean that further adjustments and price unsettlements in some lines and special situations will not occur.

FRL Challenges Goldfine's Statement. H. Maxwell Goldfine is reported to have stated that an FTC report on mislabeling of fabrics containing luxury fibers by various Goldfine mills was incorrect "because there are no experts in this field." Denying the statement, Robert N. Thurston, Fabric Research Laboratories, Inc., pointed out that in an investigation getting so much front page publicity it was unfortunate to have an assertion made that could destroy all consumer confidence in labeling as nothing more than an educated guess. Techniques have been developed, he stated, that make fiber content very much an accurate science and one that can, when properly used, create complete confidence in proper labeling.

Russian Expansion in Plastic and Synthetic Fiber Output Told. An expansion of ten or twenty fold in the next five or six years of the Russian output of synthetic

fibers and many important plastics was foretold by Dr. S. E. Bresler of the Institute of Macrocolecular Compounds, Leningrad. He said that research is progressing on methods to produce a nylon based on ethylene rather than benzene. Some U. S. textile experts envision the possibility that such ethylene-based nylon may, because of the abundance and low cost of the raw material, become a significant competitor for world nylon markets.

Textile Symposium Sept. 8-9. A textile symposium will be held in Greensboro, N. C., at the Sedgefield Inn on September 8 and 9. Subjects to be discussed include the problems facing fabric producers, finishers, manufacturers of machinery, and manufacturers of gas equipment suitable for textile application. The meeting is sponsored by the American Gas Association and the Southeastern Gas Association.

NAM Says Union Helped Cause Recession. Dr. Neal Bowman of the National Association of Manufacturers stated at the Southern Industrial Relations Conference that big unions played a major role in bringing on the present economic recession. Basing his charges on union demands for repeated wage increases, he predicted that the demands would also hamper recovery of the nation's business slump. Dr. Bowman pointed to three ways that "free society can restrain the excessive power of the unions:" (1) Making unions answerable for their actions before courts under antitrust principles; (2) forbidding unions from "destroying individual rights and freedom from compulsory membership;" (3) preventing unions from using dues and assessments for political activities.

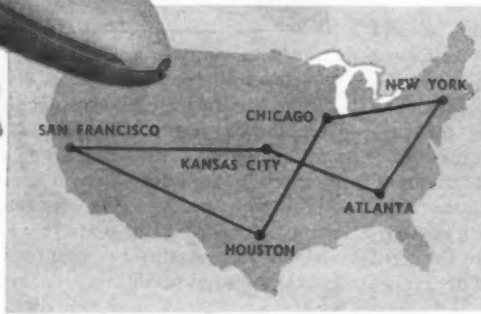
Motivation Research Launched by NIRC. A motivation research program aimed at an understanding of the attitudes of women toward professional rug cleaning has

been instituted by Market Planning Corp. for the National Institute of Rug Cleaning. The program is designed to aid the industry in attaining its desired expansion.

save your business **TIME**

save your business **MONEY**

with a Beechcraft TWIN BONANZA



Your schedules at *your* convenience. Successful leaders in every field of business depend upon Beechcraft's extra mobility that means more time and more profits.

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Beechcraft AIR FLEET OF THE TEXTILE INDUSTRY

Mill Group Studies Statistics System. A weekly statistical reporting system, instituted by approximated 35 mills in the Class A-B-C Sheeting Group and 23 selling houses, is being studied to insure all participants best results. Participating firms report each Friday their weekly production, stock on hand, and order position. The information is correlated in New York and reaches participants the following Tuesday. At a recent meeting the group discussed, among other subjects, techniques of evaluating the data for the most advantageous use, and how to open new markets for their products. Need for market research was brought out.

Clemson Establishes Textile Supervisor Development School. Clemson (S. C.) College School of Textiles has established a Textile Supervisor Development School, said to be the first of its kind. Endorsed by the South Carolina Textile Manufacturers' Association and other textile groups, the school offers a many-faceted program. Basic work is given in the requirements and responsibilities of good supervisors, plant morale, common sources of grievances, proper methods of handling grievances, statistical quality control, the role of supervisors in plant safety programs, etc.

Four-Point Plan for Changes in Trade Agreements Act. Dan Daniel, assistant to the president of Dan River Mills, has given the Senate Finance Committee a four-

Base Depreciation on "Profit Life"—Hunter

■ It is our belief that obsolescence of equipment is one of the most serious problems with which the [textile] industry is struggling, and one which must be rectified in order for the industry to survive in this era of rapid technological progress. As long as high wages and fine standards of American living continue it will be imperative for textile mills of this country to produce more efficiently. . .

It is our belief that this state of obsolescence is largely due to unrealistic depreciation rates.

Multiple-shift operation is a built-in characteristic of the textile industry, which began with World War I. Since that time the old one-shift basis has changed to a two-shift operation, then to three, and in many cases six days per week instead of five. Since World War II the textile industry's machinery has been operated at approximately 6,000 hours per year (three-shift basis) except for sporadic periods of curtailment, compared to approximately 4,000 hours per year (two-shift basis) existent only two decades ago.

Depreciation rates which were basically established for 2,000 hours per year (one-shift) operation are still being applied to machinery which is now geared for 6,000 hours per year (three-shift) operation. . .

Machine developments, occurring at a much faster rate than ever before, have increased the necessity for proper and early recognition of obsolescence on the part of the users.

Invention and mechanical improvements are more important today than age in determining machine obsolescence. It is a well established fact that in each case of a model change a high degree of obsolescence is immediately acquired by the older machine in use. In any evaluation of depreciation of machinery the definition of "useful life" should be modified so as to include the proper weighing of the following important points: (1) rate of use; (2) obsolescence through technological improvements and new developments.

It is our belief that the term "profit life" covers these points. It is an obvious fact that once a machine has outlived its profit life it is in the obsolescent class and is then merely an encumbrance to a mill's financial success. In order for a mill to maintain a profitable position under today's market conditions, long-term machine replacement programs should be planned to coincide with the profit life of each machine throughout the mill. . .

Studies on textile manufacturing equipment, department by department, made by our Association, show that based on 1958 standards of textile machine efficiency fully 65% of the U. S. textile machinery has been made obsolete by new models currently available. The fact that American textile mills are in this untenable position can be attributed in considerable measure to lack of realistic depreciation rates on capital equipment investment, and the inflationary factor involved in machine replacement programs. . .

Since 1950 and through 1956 dollar value of textile machinery products shipped averaged $450 million annually. In 1956 this figure dropped to $380 million. Department of Commerce estimates for 1958 are that only $200 million will be spent by American textile mills for modern equipment.

It is our belief that the startlingly low estimation for 1958 modernization may be directly traceable to a large extent to the policy of withholding of a decision by the Bureau of Internal Revenue Service on the Revision of Bulletin F, which as a computation measure on so-called "useful life" of textile machinery is a completely outmoded instrument. . .

. . . if a mill can save through machine efficiency, without the savings it is actually losing the same number of cents per pound of production. If sufficient cash flow is made available for an industry-wide modernization program, the textile industry of the U. S. will have a fighting chance to remain in business, compete in the world market, supply jobs for the approximately half million machine operators in the mills, and the more than 13 million people in allied industries dependent upon cotton textile manufacture. *James H. Hunter, president, American Textile Machinery Association, in testimony before the Senate Committee on Interstate and Foreign Commerce.*

Better dyeing

by **INTERNATIONAL SALT COMPANY, INC.**

How to Save 5-10% on Dyes ...Get Better Colors, Too

You can do it by using new Sterling TNA-5 Reagent in place of ordinary salt in neutral and alkaline dye baths. This remarkable reagent can cut as much as $375 from a monthly dye expenditure of $5,000 by making dyes "work harder." Compared with ordinary salt, Sterling TNA-5 forces *more* dyestuff out of solution and onto the fabrics being dyed. Thus, 5-10% less dyestuff is needed! Annual savings on dyestuff alone can amount to *thousands of dollars!*

Product quality, furthermore, is greatly improved. Finished fabrics are softer, smoother, richer in color, evenly dyed throughout. This is because TNA-5 is free of any calcium or magnesium impurities that can cause product harshness, "salt streaks," or uneven colors. Sterling TNA-5 is composed of fine, white, granular anhydrous crystals . . . and is classified as a chemically pure dyeing reagent. TNA-5 also has these additional advantages:

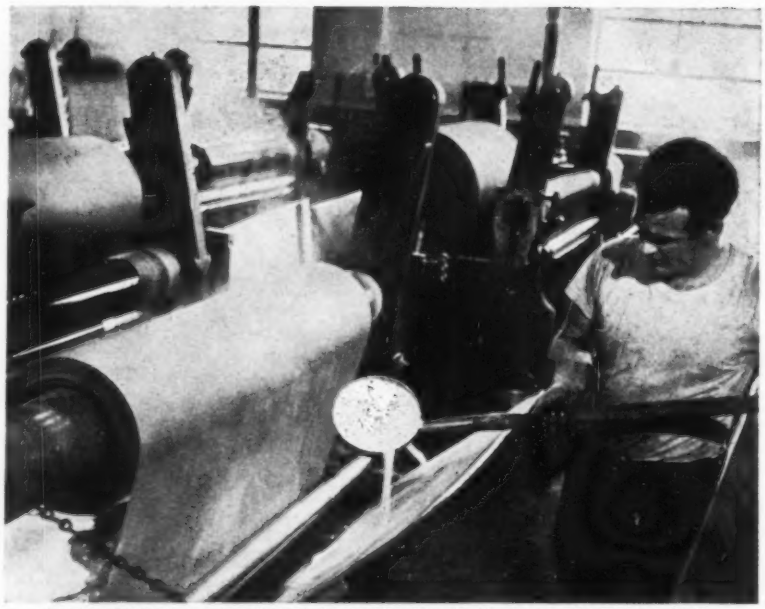
1. Costs less than Glauber's Salt. Sterling TNA-5, the purest dyeing reagent available today, actually costs *50% to 65% less* than Glauber's Salt (anhydrous sodium sulfate). Yet TNA-5 replaces Glauber's Salt on a pound-for-pound basis . . . and has an equally good exhaustion rate.

2. Extremely versatile. You can use Sterling TNA-5 in a neutral or alkaline dye bath to dye cotton, rayon, or any blend of these fibers with wool. TNA-5 is equally effective in staple, yarn, or piece-goods dyeing. And it is especially helpful in direct, sulphur, or naphthol dyes, where it produces excellent crock fastness and clear, brilliant colors.

3. Readily soluble. Sterling TNA-5 dissolves quickly and completely in hot or cold dyeing solutions. And the dissolved reagent soon permeates the entire bath. Thus, you can add dry TNA-5 to a dye bath without causing salt streaks in the finished product.

4. Works dry or in brine form. Whichever way you prefer to use Sterling TNA-5—dry or as brine—you'll get the same excellent results. Many users, however, make TNA-5 into brine in the automatic Sterling TNA-5 Dissolver. This permits economical bulk buying of TNA-5, plus the extra convenience of *piping* TNA-5 brine to the different dye baths.

5. Recommended by dyestuff manufacturers. Sterling TNA-5 has won the approval of many dyestuff manufacturers. The main reason is that this remarkable dyeing reagent lets their dyes show up better on a variety of fabrics. In fact, dyestuff manufacturers were instrumental in getting TNA-5 tested and accepted in a great many plants throughout the country.



Sterling TNA-5 is used exclusively by the Northern Dyeing Corp., Washington, N. J., to give the depth of color and luster they require for their famous Castle Creek Prints.

INTERNATIONAL SERVES ALL OF TODAY'S TEXTILE NEEDS

Through skilled and experienced salt specialists, International Salt Company can help dye houses and textile mills get greater efficiency and economy in their dyeing processes. In addition to new Sterling TNA-5 Reagent, International also produces high-quality Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for these products. So we can recommend the type of salt most perfectly suited to your plant's needs.

If you'd like the assistance of an International technician on any problem concerning salt or brine—or further information on new Sterling TNA-5—call your nearest sales office. Or write to us direct.

INTERNATIONAL SALT COMPANY, INC., SCRANTON 2, PA. • **Sales Offices:**

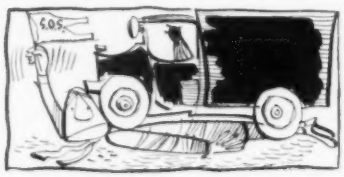
Atlanta, Ga.	Chicago, Ill.	Memphis, Tenn.	Philadelphia, Pa.
Baltimore, Md.	Cincinnati, O.	Newark, N. J.	Pittsburgh, Pa.
Boston, Mass.	Cleveland, O.	New Orleans, La.	Richmond, Va.
Buffalo, N. Y.	Detroit, Mich.	New York, N. Y.	St. Louis, Mo.

Modern research in textiles gives you **STERLING TNA-5**

PRODUCT OF INTERNATIONAL SALT COMPANY INC.

point plan for changes in the House-passed Trade Agreements Act. The recommendations made in behalf of the American Cotton Manufacturers Institute are: (1) A two-year limit to the authority of the Trade Agreements Act. (2) Tariff reduction by five per cent per year non-accumulative and not applicable to any article on which a reduction has been made since January 1, 1955. (3) A change in the terms of the present "escape clause" procedures whereby a finding of injury on the part of the Tariff Commission would be deemed final. (4) The establishment of practical and workable criteria for the determination of peril points.

Truckers Impose Five Per Cent Rate Increase. A five per cent increase on all volume and truckload traffic between points in Southern territory and points in Eastern and New England territories has been



instituted by motor carriers. The Textile Traffic Association has filed a petition with the Interstate Commerce Commission asking suspension of the increase as it is "unjustly discriminatory."

AATCC Convention Notes. The Western Region of the American Association of Textile Chemists and Colorists has announced preliminary details of the Association's 37th National Convention, to be held in Chicago, Oct. 30-Nov. 1. Technical sessions will be held on the afternoon of Oct. 30 and the morning of Oct. 31; the annual intersectional contest papers will be presented on the afternoon of Oct. 31. Saturday morning, Nov. 1, will be devoted to a symposium on AATCC research. The exhibits this year will be noncommercial and will be devoted to the current status and achievements of AATCC research.

Extension of Wool Act Sought. The National Association of Wool Manufacturers is supporting efforts of the National Wool Growers Association to have Congress extend the Wool Act of 1954. President William I. Kent has advised NAWM members that continuation of the Act is "desirable in the national interest and the over-all industry interest."

More Resistant Nylon Tire. The Gates Rubber Co. of Denver, Colo., has announced the development of a nylon tire with 52% more resistance to road impacts, which is

built into the tire by a special preconditioning and curing process. The new process equalizes tension in the cords, plies, and individual filaments of nylon in the body of the tire, thus producing a degree of strength and safety previously unattainable in tires of standard manufacture, it was said.

No-Solicitation Rule Against Union Organizers Upheld. Supreme Court Justice Felix Frankfurter has upheld, with qualifications, an employer's right to enforce a no-solicitation rule against union organizers, even though he, himself, engages in anti-union solicitation. In disposing of a case growing out of Textile Workers' Union of America to organize Avondale Mills, Justice Frankfurter set forth the majority opinion, saying in part, " . . . the Taft-Hartley Act does not command that labor organizations . . . be protected in the use of every possible means of reaching . . . in-

Considers marketing research a "must" for mills

■ MARKETING research can expand markets and should be considered essential to insure participation in an expanding economy, W. E. Clark of U. S. Rubber Co., told the South Carolina textile manufacturers recently.

Profits have become dependent upon knowledge of markets, and 1958 is a year of evaluation and planning ahead, Mr. Clark said. A textile marketing research department can develop information to help keep ahead of the markets, he declared.

The marketing research department is a service organization and should serve in sales, merchandising, manufacturing, and development, Mr. Clark explained. The marketing research manager of U. S. Rubber reports to the vice-president and general manager of manufacturing, and the staff includes a marketer, two analysts, and two clerks. The Bureau of Census and trade publications are among the sources of information used by the department. Reports from the department must be digested and acted upon by management.

Last year, 57 per cent of outside

Staff photo

sales were in new items introduced by the company, and U. S. Rubber Co. considers its textile marketing research department a necessity, not a luxury, Mr. Clark concluded.

ALMOST EVERYWHERE YOU TURN THERE'S A MEAD CONTAINER PLANT TO SERVE YOU

Mead corrugated shipping container plants are strategically located wherever industry is concentrated. That means you get prompt, personal service, lower costs and flexible local deliveries. In addition, you get all the other advantages of a completely integrated, nation-wide organization.

Mead's multi-plant operation guarantees you a sure source of supply of corrugated shipping containers with quality controlled all the way from forest to finished product. You also get the industry's most extensive research facilities plus Mead's comprehensive design and engineering facilities to help solve your container problems quickly, efficiently, economically. Call your Mead representative soon.

MEAD *containers*

MEAD CONTAINERS, INC., Subsidiary of **THE MEAD CORPORATION** • Executive Offices, Cincinnati
National Sales Offices, 230 Park Avenue, New York 17, New York • 5875 North Lincoln Avenue, Chicago 45, Illinois, and in principal cities

dividual workers, nor that they are entitled to use a medium of communication simply because the employer is using it."

Vorarlberg Cottons Find Ready U. S. Market. According to "Textildienst Aus Vorarlberg" the Vorarlberg (a province in Austria) cotton industries have found a good market in North America. Some firms already export large

quantities of shirt and dress materials to the United States, although such imports are handicapped by high freight costs and considerable customs duties. It is reported that Vorarlberg industries have recently been successful in securing linen orders for equipping complete American hotels.

TTMA Seeks Tariff Schedules. The Tufted Textile Manufacturers Association has retained a Washington, D. C., law firm to appear before the Tariff Commission and the Bureau of Customs to secure tariff schedules on tufted products and materials. Amendments and clarification on several major points have been asked.

Spinning Lab for Clemson. A 1,000-spindle pilot cotton spinning research laboratory is being established jointly by the U. S. Department of Agriculture and Clemson College, and will be in operation next year. To be housed in the textile school building at Clemson, S. C., the plant will be available to USDA agencies, and to the extent that capacity permits, to state experiment stations and the cotton industry.

Saltonstall Urges Positive Recommendations for Textile Industry. Senator Leverett Saltonstall (R., Mass.) has urged the special subcommittee investigating the condition of the textile industry "to adopt positive recommendations which offer a definite course for industry and government." He asked the subcommittee to examine the industry's problems from three aspects: (1) foreign competition, (2) the government's raw cotton support program, and (3) the need for modernization and promotion within the industry.

Twills More Durable Than Plain Weaves. The Minnesota and South Dakota Agricultural Experiment Stations report that twills rate higher than plain weaves in both break strength and abrasion resistance. After a study of 33 all-wool and wool-blended suitings, the report states that in elongation and flex stiffness, many of the twill suitings were superior to plain weaves, but plain weaves have superior crease recovery. Other findings include: Adding as much as 10 to 15 per cent nylon to wool strengthens suitings and increases resistance to edge wearing. Part-wool or all-wool fabrics are superior in crease recovery. In general appearance, fibers with larger amounts of wool rank high.

Chemstrand Shows Educational Film. A new half-hour color motion picture which reviews the history of fibers and fabrics is available for general showing to educational, industrial, and civic groups

throughout the nation. Entitled "Fibers and Civilization," the film is sponsored by Chemstrand Corporation as a means of providing informational material on fibers to the general public. It will be distributed through Modern Talking Picture Service, Inc., New York City, and its offices throughout the United States.

Freight Tax Repeal Most Aid to Long-Haul Shipper. Paul P. Watkins, attorney and traffic manager Georgia-Alabama Textile Traffic Association, and L. O. Kemperly, Jr., traffic manager of the North and South Carolina Textile Manufacturers Associations, gave it as their opinion that the repeal of Federal taxes on freight transportation widened the spread in delivered costs between shippers who were close to the markets and those farther away. Mr. Watkins stated that it also gives a further "3 per cent advantage to competitors large enough to purchase their own delivery equipment since the tax does not apply to private carriage by truck." He said that every general freight rate increase aggravated the distinction between short- and long-haul shippers.

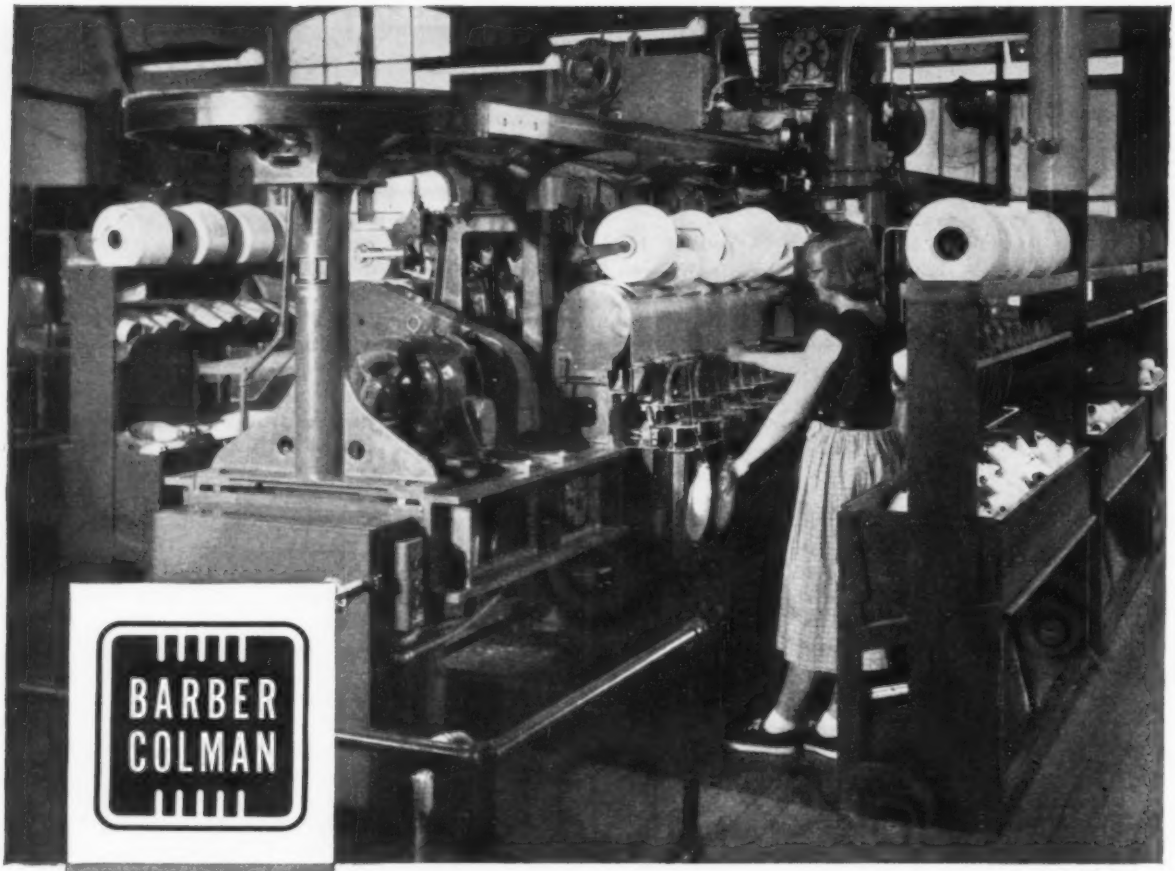
News in Brief

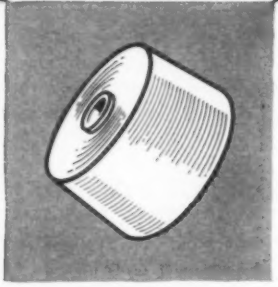
Pacolet Wins Damage Suit. Pacolet Manufacturing Co. has been awarded $175,000 in its suit against the Federal Government over damage to its sewage outfall system. The company charged damage to the New Holland (Ga.) Plant No. 4 and said that back waters of the Buford dam caused the damage.

ARI Opens Akron Office. American Rayon Institute has opened an office in the First National Tower Building in Akron, Ohio. George M. Sprowls, who is in charge of the rayon tire cord research program, will make his headquarters there.

Textile Mill Failures Decrease. Dun & Bradstreet, Inc., announce that manufacturers of textile mill products showed decreases in both numbers of failures (down 7%) and liabilities (down 8%) for the first six months of 1958 compared to a corresponding period in 1957.

Wash and Wear Developments Reviewed. Hints to converter, cutter, and retailer on how to avoid hazards implicit in wash and wear promotion are supplied in the 1958 annual "Report on Trends in Textiles" just released by Cold Spring Bleachery. Reviewing developments at length, Cold Spring





SEE THIS NEW MACHINE IN OPERATION

SOUTHERN TEXTILE EXHIBITION

GREENVILLE, S. C.
OCTOBER 6 - 10

TYPE DD AUTOMATIC SPOOLERS PRODUCE 6-6½ lb. 4° CONE PACKAGE

With the advent of shuttleless looms, and other machines of a similar nature, the need for a cone package and a magazining feature caused modifications in the Type D Automatic Spooler which resulted in the Type DD machine shown above. This spooler produces large cones with 4° tapered sides instead of cheeses with straight sides. The actual size and weight of the cone is much the same as the cheese, but the shape is different.

While the Type DD Automatic Spooler has been designed primarily to supply the shuttleless looms with a package suitable for handling the filling yarns, it also has a definite appeal to mills which backwind to sales or knitting cones. The use of the 4° cone as a supply package is also being tested and the results so far are very encouraging.

Provision for magazining is accomplished by putting a few turns of tail on the bottom of the cone starter, where it can be easily found and tied to the outer end of the following cone. This tail is put on in the new Starter Maker machine, a useful accessory to any spooler installation. Also, arrangements can be made to put the magazining tail on the cone at the Spooler if desired. *Write for further details.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. "COMASA" R. Glicerio, 537/547 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-Machi, 3-Chome Higashi-Ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr) Ltd. 730, Muhammadi House, McLeod Road Karachi 2, Pakistan

speculates that finishers will soon have a set of standards "you can lay a yardstick on." Copies may be obtained from the firm's Yardley, Pa., office or from Cold Spring Industries, 350 Fifth Avenue, New York, N. Y.

Supermarkets Sell 5.2% of Women's Hosiery. Lassiter Corp. has announced that investigation shows that 5.2% of the total volume of women's hosiery output was shipped to supermarkets in 1957. The firm undertook the investigation because of a story in a publication in the supermarket field which claimed that supermarket sales accounted for 30% of all ladies' hosiery sales in 1957.

National Cotton Council Supports Farm Bill. The cotton industry's fight for corrective farm legislation took a new turn when the National Cotton Council threw its support behind bill S. 4071 as representing cotton's best hope for legislation that will take effect in 1959. While agreeing that the bill is not perfect, Council president Harry S. Baker emphasized that it will move the industry toward expanded production and consumption of U. S. cotton.

Business Upswing Indicated. According to Secretary of Commerce Sinclair Weeks, the economy may see only slight changes during the summer, but a definite upswing seems in the cards for the fall. He bases his prediction on an

increase of 150,000 for the manufacturing share of employment in June, the first increase since December, 1956; the increase of the work week in June; and an increase in industrial production in May and another probable increase in June.

News in Brief

Trend in Apparel Fabrics Away from All-Synthetic. Albert Silverman, assistant vice-president of Commercial Factors Corp., reports that the trend in apparel fabrics is shifting away from the 100% synthetic. He attributes this to two pressures: the comeback of cotton and silk, and the up-surge of blends. Many converters are of the opinion that "pure synthetics" will have to concede ground to blended fabrics and possibly to cotton, Mr. Silverman said.

Disposable Paper Fatigues Being Tested by Army. A disposable and inexpensive paper garment is currently undergoing tests at Fort Devens, Mass., for the QM's Natick Research and Development Laboratories. The new type fatigues are made of strong, soft texture,

Bulgin' at the seams with new equipment!

■ THAT'S what you're likely to say about Textile Hall in Greenville, S. C., scene of the 20th Southern Textile Exposition October 6-10, after you have been there and seen all of the new equipment and supplies to be on display.

Many of the more than 330 textile industry suppliers who have contracted for space in the 100,000 sq ft exhibition building (another addition was recently completed) have given TEXTILE INDUSTRIES complete details about their exhibits, and a number of new developments were mentioned.

A "sneak preview" of one of the new processing machines to be on display and operating is provided for you in this issue (see pages 73-76). But that's only the beginning. . . .

The October issue of TEXTILE INDUSTRIES, which will be in your hands a week before the Show, features a *complete* preview, including a list of the exhibitors, what they are showing (in words and pictures), names

of their representatives who will attend, and a handy floor plan to help in locating your supplier friends. Watch for it.—The Editors.

News in Brief

light green corrugated paper and consist of a coat, stitched with buttons and button holes, and pajama-type trousers with a draw string waist. They are designed to be worn over other clothing to protect it from dirt and wear.

Merger of New Bedford and Bradford Durfee Proposed. Governor Foster Furcolo has urged the Massachusetts legislature to consider the merger of New Bedford Institute of Technology and Bradford Durfee College of Technology into a new Southeastern Massachusetts Technical Institute. Pointing out the two schools, only a few miles apart, are in need of funds to expand already overcrowded facilities, Governor Furcolo stated that a new modern institute could be developed for little additional cost.

MERCHANDISING NOTES

Aldon Rug Mills will appear this fall on both "Today" and "The Jack Paar Show" on the NBC-TV network to promote its new line of rugs and carpets. This marks the first time Aldon will promote its products on TV and is believed to be the first major effort by a carpet manufacturer to capture both the morning and late night audience.

Better Hosiery Council has an advertisement in this month's issue of *Parents' Magazine* for its hosiery Seal of Approval. *Parents'* has investigated the claims made, and given its approval to the Seal. It is reported that some mills which were dubious of the program at first have now found that their customers want the Seal, and so have joined the promotion.

Cabin Crafts, Inc., predicts a substantial increase in sales during the last half of 1958. Sales for the first half were expected to show an estimated 40% increase over the same period in 1957. Board chairman F. R. Westcott stated that during the June floor covering market in Chicago "sample and stock order sales were at the highest rate of any previous market."

Cannon Mills, Inc., is marketing a new line of cotton sheets, both flat and fitted, with a no-iron finish. Available in white only, the finish is said to be permanent for the life of the fabric. According to spokesmen, the sheets resist stain and mildew, are odor-free, and will dry faster than regular cotton sheets.

Chicopee Manufacturing Corp. has introduced a new disposable golf towel under the tradename Masslinn. The towels, made with the Keybak Bundled Fabric process, are said to be soft, strong, absorbent, sanitary, and economical. They sell for about 10¢ each at golf courses.

Dan River Mills, Inc., is marketing a line of no-iron pillowcases and sheets under the name of Wrinkl-Shed with Dri-Don. It is claimed that the finish is permanent for the life of the fabric and that normal hand is maintained on muslin and percale.

Pacific Mills Domestic Corp. is offering a line of white and striped cotton sheets and pillowcases with a Pacimatic no-iron finish. Sold under what the company calls an unqualified money-back guarantee, the sheets are said to be crease-resistant, dry wrinkle free, and get fewer wrinkles in use. The no-iron sheets are claimed to retain the hand of the company's regular sheets.

The Pequot Div., Indian Head Mills is now offering all-cotton shirting and other apparel fabrics with a no-iron finish which is claimed to permit tumble-drying in home dryers.

Roxbury Carpet Co.'s first full-color advertising photograph, scheduled for *Better Homes and Gardens* magazine, was cited in the July issue of *Art Direction Magazine*, the official publication of the National Society of Art Directors, as one of the best advertising photographs to appear in national publications during the past year.

Scott Paper Co. is marketing its newly developed type of urethane foam, the first non-paper product to be made by the firm. Under the tradename "ScottFoam," the product is being utilized as the interlining for various items of men's, women's, and children's outerwear and sportswear.

Springs Mills, Inc., has introduced a new non-chlorine retentive white available in a wide variety of resin-treated cottons at no additional cost. It is claimed that the new whites do not become discolored or frayed on contact with chlorine bleaches.

Temptation Hosiery Co. is offering patent applications for placing emblems on socks. The emblems may be obtained from a variety of sources. The novel idea was developed in answer to the demand for something radically new and interesting in sock patterns to spur sales. Seven firms are already licensed to apply emblems to their hosiery.

The Vat Dye Institute is distributing promotion kits spotlighting the importance of colorfastness in "back-to-school" apparel fashions. The promotion was launched with full page four-color ads in the August issue of *Good Housekeeping* and the August 3rd issue of *The New York Times Magazine*.

Wunda Weve Carpet Co. took advantage of the recent inauguration of direct air service between Chicago and Greenville, S. C., to reap considerable publicity. A group of Greenville citizens presented Wunda Weve carpets to various mayors of cities on the route, and the firm saw to it that the planes used on Delta's Chicago-Greenville run are equipped with Wunda Weve carpeting.

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

On this recession

A RECESSION is a peculiar phenomenon. It can come at any time and at any level of the economy.

As the word implies, it represents a receding from some high point previously reached in an economy, and it doesn't make any difference how unjustifiable the reaching of the high point might have been, or how short-lived were the pressures that pushed the economy to that point, the hue and cry is on and everybody talks about the time when we will get back to the previous level, or perhaps surpass it.

A recession is literally an attempt on the part of an economy to find a level which can be maintained. Inflationary expenditures by governments—whether national, state, or local—will put money in circulation which may later be withdrawn from circulation.

If the federal government puts five billion dollars of borrowed money into the economy, that can possibly cause 10 or 15 billion dollars' worth of inflation. If the money is spent for some nonrecurring object, the people in charge of the government certainly must know that jobs predicated on the expenditure of that money will only be temporary jobs.

The expenditure of five billion dollars by the government within a year's time will directly lead to the payment of wages employing about 1,250,000 people. These people in spending that money will create purchasing power which may delude merchants into undertaking expansions, and manufacturers into enlarging their plants. These activities will in turn create more temporary purchasing power, which will result in other delusions of grandeur which will cause more inflation, and the vicious chain continues until the original expenditure is at an end.

The several million persons who finally become involved in such a chain reaction are now without work and clamor for the government to give them work, which the government can only do by creating more inflation of the same sort. We therefore undertake all kinds of wildcat adventures in an effort to keep on payrolls people that perhaps never should have been put there in the first place, and who can not justifiably be retained.

We call this state of affairs a recession.

When the country was enjoying a national income of $100 billion a year, that was an all-time high; and many persons wondered if it could be long maintained when the war was over. It was regarded as a condition of unexampled prosperity. To drop back to $90 billions would therefore constitute a recession.

When the country got up to $110 billion, a drop back to the previous phenomenally prosperous level of $100 billion would be a recession.

In the dizzy climb from a national income of $100 billion to nearly $400 billion, any slipping backward at any time was regarded as a recession, and when we were at the point of $200 billion, if we slipped back to $150 billion, that would be regarded as a depression and a pretty serious state of affairs.

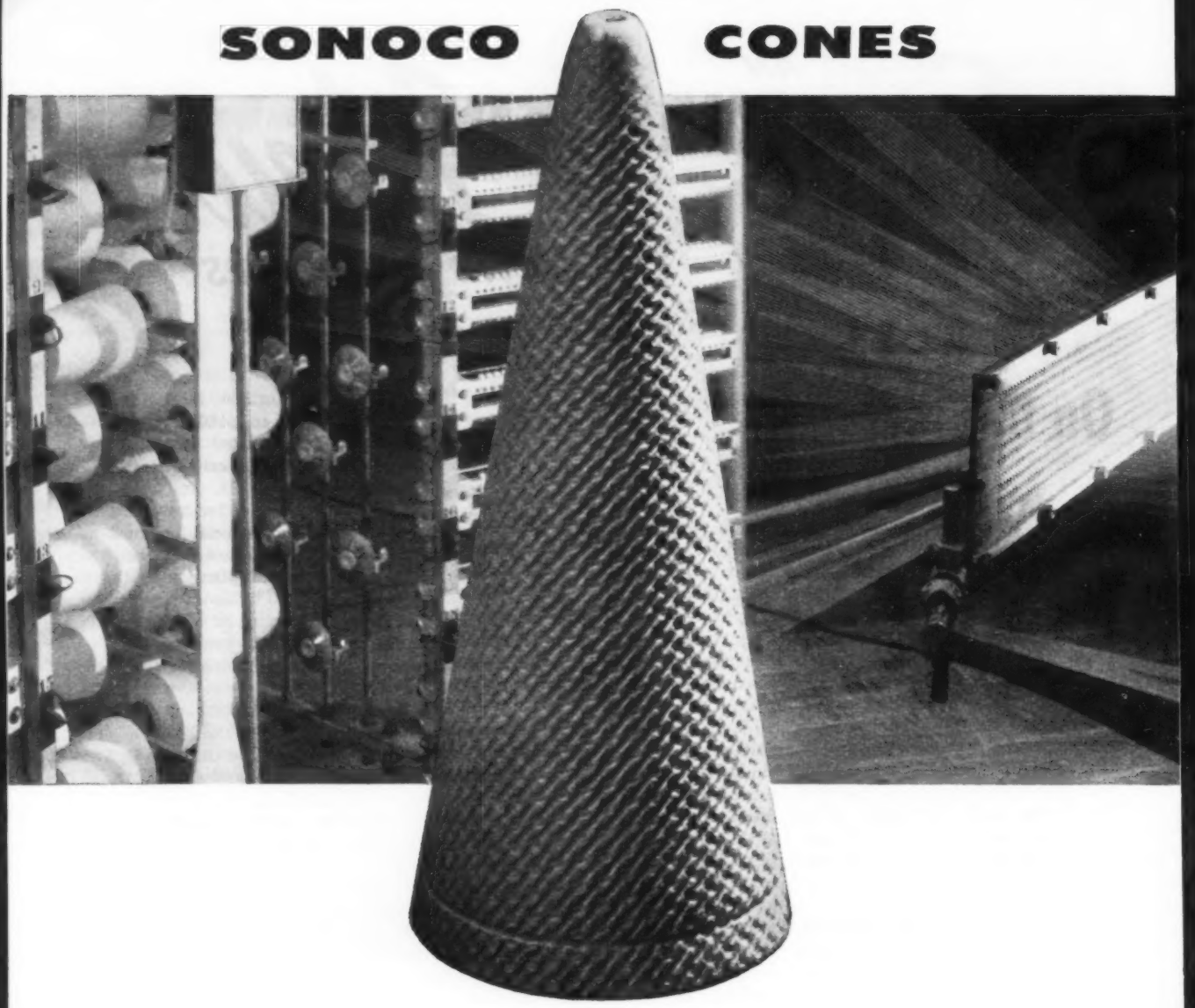
If enough inflation is fed into the economy to up the national income to $500 billion, then we will be suffering a serious depression if it drops back to $400 billion.

After each injection of inflation, the economy naturally tries to find a reasonable level which can be maintained. A reasonable level is that which is determined by the normal expenditures of people who distribute purchasing power based on the real production of commercial goods.

Purchasing power based on government expenditures for goods which are non-commercial is always inflationary, and the people who get the wages resulting from such expenditures should be constantly reminded that their jobs are temporary and that they had better be looking for something permanent if they can find it. Far from taking any such practical view of the matter, employers seem to regard these jobs as immutably permanent, and fail to tell employees that the jobs can be jerked out from under them at any moment by a failure on the part of the government to continue the particular project involved.

Since on almost any given government project at least half of the money appropriated will almost certainly be wasted, an abnormally large number of persons are left jobless when an appropriation is expended and not renewed. A great deal of the fantastic budget now under consideration is not being appropriated for buying things that we really need, but is being provided to buy our-

SONOCO CONES



save dollars — at the cost of a few cents!

Economy is a Sonoco product too . . .
For nearly 60 years Sonoco cones have effected many important economies directed toward more profitable textile operations.

Sonoco cones are made to cut operating costs in 3 ways, through:

- ***low initial cost***
- ***trouble-free uniformity***
- ***increased operating efficiency***

Unrelenting research and development goes on constantly at Sonoco to maintain and improve on the economies of Sonoco cones. Long experience has developed our cone specifications for every type of textile need.

A qualified Sonoco sales engineer is available to help you get the best results in *your* mill, with *your* yarns, and *your* machinery.

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Products for Textiles

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1743

selves out of the present slump. And, of course, during a slump taxes fall off and higher appropriations can only be made on an inflationary basis. When the additional inflation has been pumped into the economy and follows its natural course, and brings about a temporary period of boom again, any receding from that boom level will be looked upon as an avoidable calamity and the clamor will go up for more inflation to reestablish the boom.

Our economy has been running along on this lunatic basis for about 25 years, and we are afforded the incredible spectacle of the cost of living going up in a time of recession, when by any of the rules of economic sanity the cost of living should go down.

We were told that the increases in the cost of living over a period of several years were due to the postwar boom. Now they seem to be due to the post-boom recession.

Any attempt to control prices in a supposedly free economy can only control them upward. Nobody will stand for controlling anything downward, and yet inevitably some prices must be too high when others are assumed to be too low.

In our kind of controlled economy there is never any such thing as a price being too high in the eyes of the people who control the price. We continue to heave huge chunks of inflation into the boiler to keep the pressure up while we tie the safety valve down.

THE PERSONS who are most vocal always in times of recession are the current wage earners and the people engaged in business. The millions of widows and orphans and old people who are trying to live on shrinking incomes are seldom given a moment's thought, but their plight in times of great prosperity for the currently employed is just as pitiful as that of an employed man out of work during a recession.

The great boom of the last 15 or 16 years has largely been fueled with the savings of these unfortunate fixed income people. Practically anybody knows several or perhaps dozens of these unhappy old people, or practically destitute widows with children on

Date		Event	Location
Sept.	9-10	The Fiber Society	Montreal, Que.
	10-11	Combed Yarn Spinners Association annual meet	The Cloister Sea Island, Ga.
	11-12	6th Canadian Textile Seminar	Queens University Kingston, Ontario, Can.
	12	Delaware Valley Section AATCC	Wilmington, Del.
	12	North New England Section AATCC outing	Wachusett Country Club West Boylston, Mass.
	13	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	13	Southeastern Section AATCC	Ida Cason Callaway Gardens Pine Mountain, Ga.
	18-19	Chattanooga Yarn Association	Read House Chattanooga, Tenn.
	19-20	Piedmont Section AATCC	Hotel Charlotte Charlotte, N. C.
	25-26	Northern Textile Association	Wentworth-by-the-Sea Portsmouth, N. H.
	25-26	Textile Quality Control Association	Grove Park Inn Asheville, N. C.
	26	Niagara Frontier Section AATCC	Niagara Falls, Ont., Can.
	26	Rhode Island Section AATCC	Warwick Country Club Warwick, R. I.
	26	Western New England Section AATCC	Hartford, Conn.
Oct.	1-2	Chemical Finishing Conference	Washington, D. C.
	6-10	Southern Textile Exposition	Greenville, S. C.
	9-10	North Carolina Textile Manufacturers Association annual meeting	Carolina Hotel Pinehurst, N. C.
	10	Southern Textile Overseers Association	Greenville, S. C.
	14-16	National Industrial Packaging, Handling, and Shipping Show	The Coliseum Chicago, Ill.
	14-17	A.S.T.M. Committee D-13 fall meeting	Sheraton-McAlpin Hotel New York City
	15-25	International Textile Machinery Exhibition	Belle Vue Manchester, England
	21-22	Cotton Spinner-Breeder Conference	Lubbock, Tex.
	23-24	Southern Textile Methods & Standards Association	Clemson House Clemson, S. C.
	25	Alabama Textile Operating Executives carding and spinning discussion, 9:30 A.M.	Thach Auditorium Auburn, Ala.
	28-29	Institute of Textile Technology technical advisory committee and board of trustees	I.T.T. Charlottesville, Va.
	28-31	Carded Yarn Association annual meeting	The Homestead Hot Springs, Va.
Oct. 30-Nov.	1	AATCC national convention	Hotel Conrad Hilton Chicago, Ill.
Nov.	7-8	Textile Seminar sponsored by University of Georgia division of clothing and textiles in extension, teaching, and research	Georgia Center for Continuing Education Athens, Ga.
	8	Textile Operating Executives of Georgia slashing and weaving discussion; 9:00 A.M.	Georgia Tech Atlanta, Ga.
	17-19	Narrow Fabrics Institute annual meeting	Hotel Roosevelt New York City
		1959	
Jan.	20-30	Plant Maintenance & Engineering Show	International Amphitheatre Chicago, Ill.
	26-29	International Heating & Air Conditioning Exposition	Convention Hall Philadelphia, Pa.
Mar.	19-21	American Cotton Manufacturers Institute annual convention	Palm Beach Biltmore Palm Beach, Fla.
May	4-8	Knitting Arts Exhibition	The Auditorium Atlantic City, N. J.
May	12-14	Cotton Research Clinic	Grove Park Inn Asheville, N. C.

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POWELL

NICKEL and MONEL* VALVES

Fig. 2108—Monel or Nickel "Y" Valve for 150 pounds W.P. Outside screw rising stem and yoke. Screwed ends. Flanged end or socket welding end valves can be supplied.

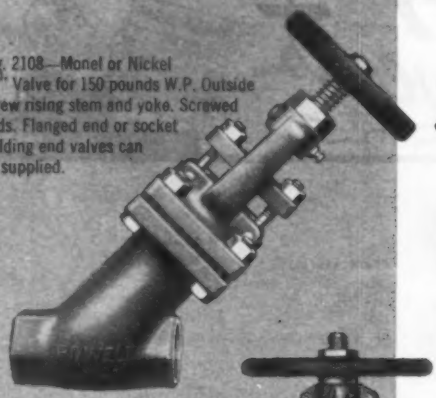


Fig. 2453 SG—Large size O.S. & Y. Gate Valve for 150 pounds W.P. Solid wedge disc. Can also be furnished with split wedge disc. Dimensions conform to latest standards.

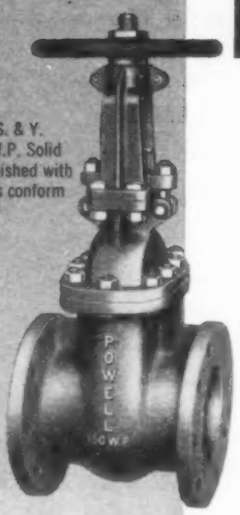
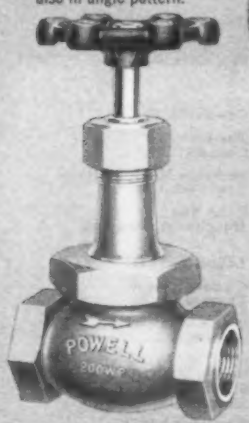


Fig. 1836—Monel Metal
Fig. 1839—Nickel
Small Union Bonnet Globe Valve for 200 pounds W.P. Available with screwed, flanged or welding ends; also in angle pattern.



Now that restrictions have been lifted on the manufacture of Nickel and Nickel Alloys, we have produced a wide line of NICKEL and MONEL* METAL VALVES. All are ready for immediate delivery!

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THE WM. POWELL COMPANY
Cincinnati 22, Ohio
dependable valves since 1846

*Registered Trade Name of The International Nickel Co.

Fig. 1828—Monel Metal
Fig. 1830—Nickel Inside screw rising stem Gate Valve for 200 pounds W.P. Accurately guided solid wedge disc. Also available with flanged or socket weld ends.

Fig. 1843—Monel Metal. Fig. 1845—Nickel. Small size Check Valve for 200 pounds W.P. Screwed-in cap. Has straightway flow area through valve body when disc is in wide open position. Can also be supplied with flanged or socket weld ends.

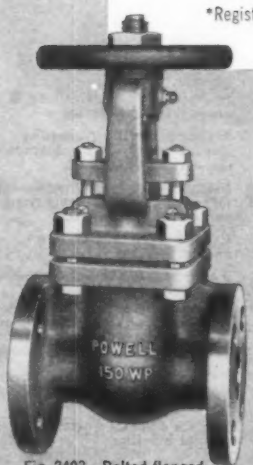

Fig. 2493—Bolted flanged bonnet Gate Valve for 150 pounds W.P. Outside screw stem rises through revolving bushing in upper yoke. Interchangeable solid or split wedge discs. Screwed or socket weld end valves also available.

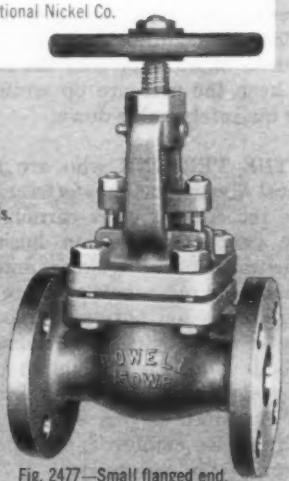

Fig. 2477—Small flanged end, outside screw rising stem and yoke Globe Valve for 150 pounds W.P. Bolted flanged bonnet. Can be furnished with screwed or socket weld ends. Angle Valves available.

their hands who are trying to live on money painstakingly saved at a time when money was worth about twice what it is worth now.

The unemployed man who improvidently and fatuously squandered every nickel he could get hold of while his job lasted is able to depend on Social Security and the unemployment handouts that vote-conscious Congressmen make available.

The man who didn't squander everything, but who saved by doing without so that he would be independent, and who is now trying to live on what he saved, has a hard row to hoe. His savings are being dragged out at twice the rate they should be, and tossed into the kitty to take care of the man who never saved anything.

A recession, therefore, is not so tough for the shiftless and improvident man who had it good while the fancy job lasted, and who—thanks to Social Security and relief payments—is better off unemployed than he would have been if the fancy job had never been made available. It is the hard-working, thrifty, prudent, provident citizen who is robbed of his savings by inflation.

No group of politicians is ever likely to admit that our national economy has reached too high a level and should be allowed to recede a little bit. A few wise and prudent men who manage to get into Congress by accident may see what is happening and try to take prudent measures to combat it, but the great mass of political thinking on high levels and low will impel us to get back on the inflationary road whenever previous inflation has failed us, which it must inevitably do when an inflationary push has expended itself.

THE TEXTILE industry, as usual, is one of the first and worst victims of a recession.

If people refuse to buy as many automobiles as usual, the automobile makers accommodate themselves to the market and do not make a million or so unsalable cars and stick them in warehouses

under the happy delusion that things will soon pick up and the cars will move like hotcakes.

Most businesses quickly try to accommodate themselves to market demands, but in the textile industry you will consistently find large segments of the industry running overtime to over-glut an already glutted market. The textile industry has always been this way, and with reasonable certainty always will be that way.

We in the textile industry can only hope that other businesses which constitute the major portion of our economy will also get on a fully competitive basis and help wring some of the inflation out of the economy so that it can be stabilized at a maintainable level which will have the usual ups and downs inherent in any economy,

(Continued on page 208)

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*DuPont's acrylic fiber

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Whitin vice-president R. J. McConnell (left) and J. Hugh Bolton, president, examine the new Whitin-Piedmont spinning frame. Note straight path of yarn from nip of front rolls to thread guide, and balloon control rings. Traverses up to twelve inches are possible.

New Piedmont spinning frame Whitin's pledge of faith in future of textile industry

Million-dollar spinning frame

Staff report

THE WHITIN Machine Works introduces to the textile industry this month a completely new spinning frame. Company officials estimate that the new frame represents an investment of a million dollars in research and tooling.

The new frame is called the "Piedmont," for the section of the Southeast which contains the largest concentration of spindles in the western hemisphere. Its over-all lines, color, and style were planned by the industrial designing firm of Raymond Loewy Associates.

The features of the Piedmont frame include narrow width—27" over-all; individually driven spindles; straight - line spinning (yarn path is vertical from front rolls to bobbin); traverses up to 12"; balloon control rings; new builder motion; and an arrangement for dispersing the heat generated by the motor.

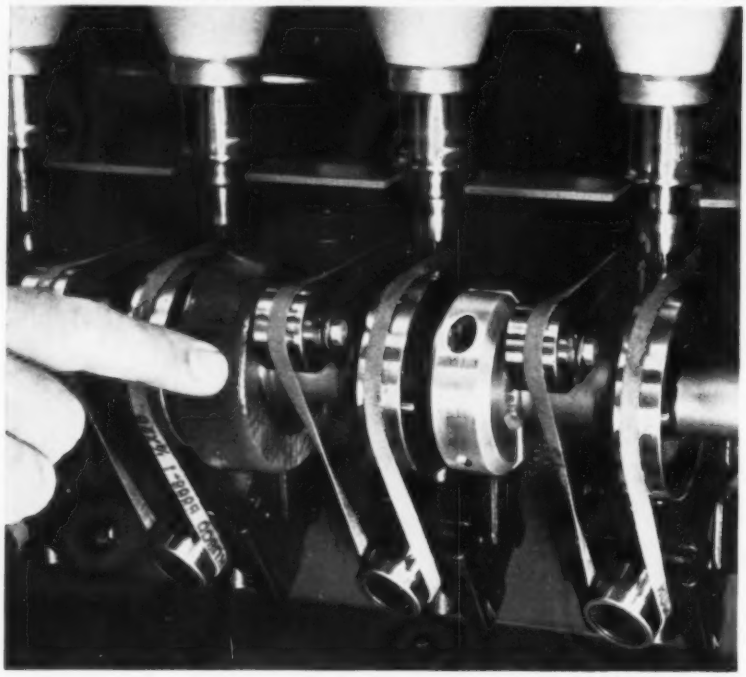
The technical details of the new frame which follow were provided by company officials.

Spindle Drive. The spindles of the Piedmont frame are driven from shafts mounted outside each spindle rail, with belt, guide, and tension pulleys at each spindle position. The drive shafts are mounted in sealed antifriction bearings, and consist of short sections connected together by reinforced split couplings.

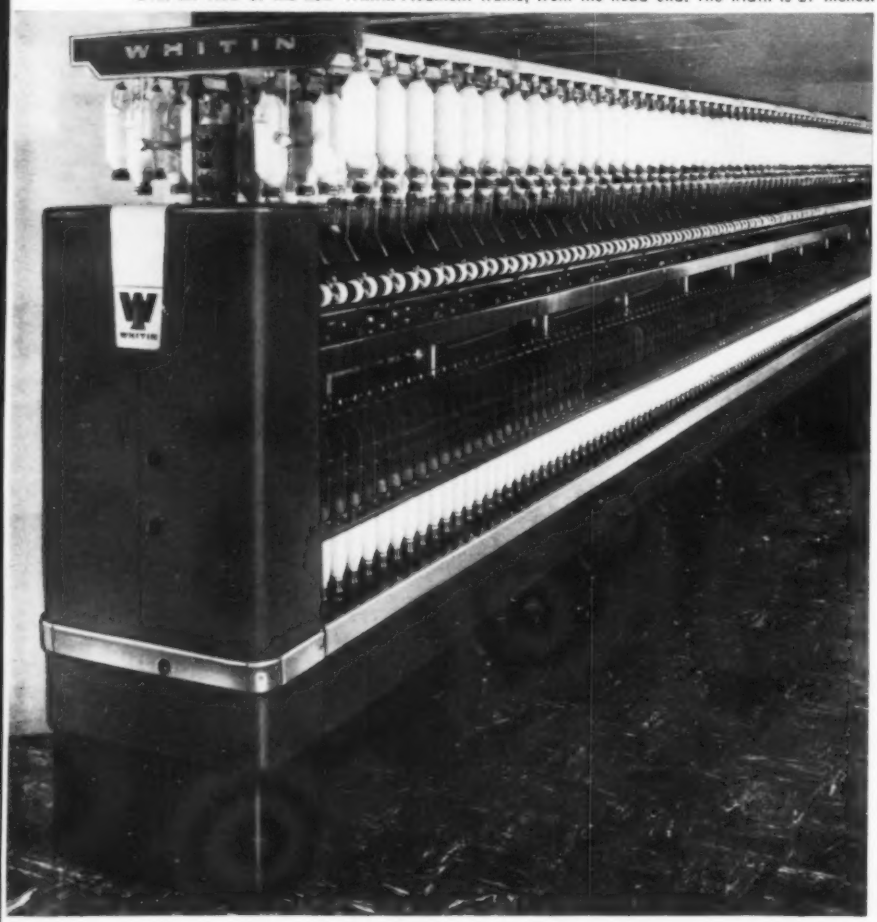
The one-piece ¼" x 20" belt passes over the shaft driving pulley, under a tension pulley, over an idler pulley, and makes 180° contact with the spindle whorl. Ratio of shaft speed to spindle speed is 1 to 2.50. Since the spindles are independently driven, the starting, stopping, or operation of one spindle does not affect the operation of any other. Each spindle has a brake, actuated by a hand lever mounted on top of the spindle drive enclosure.

The spindle drive on the Pied-

Individually driven spindles receive power from shafts mounted outside each spindle rail.



Over-all view of the new Whitin-Piedmont frame, from the head end. The width is 27 inches.



mont frame eliminates the cylinder, cylinder bearings, tape tension pulleys, and tapes. This in turn eliminates the principal causes of excessive air eddies and rapidly moving air streams, which increase ends down and deposit lint everywhere on the frame and in the atmosphere.

Belts can be replaced in ten seconds, with the frame running or stopped.

The frame is equipped with "Piedmont Pioneer" center-base anti-friction spindles, and full-length separators mounted on tiltable brackets.

Straight-Line Spinning. On the new spinning frame, the path of the yarn from the nip of the front rolls to the spindle is a straight line; however, this is a return to an old principle rather than the development of a new one. The advantage of the straight line is that the twist can run unimpeded from the traveler to the front rolls, thereby reducing ends down.

The angular yarn path used on conventional spinning frames was adopted for manufacturing and spinning, just as was the adoption on the Piedmont frame of roll stands set at 60° from the horizontal, instead of the theoretically most desirable 90°. However, long traverses, high spindle speeds, and large rings made necessary a return to straight-line spinning.

The consequent improved twist distribution makes possible lower twist multipliers, increased front roll speed, and hence increased production.

Balloon Control Rings. On conventional spinning frames, the variation in tension which occurs as the yarn balloon is lengthened and shortened in winding the yarn onto the bobbin has limited the size of the yarn package which it is practical to spin—and particularly its height.

If the proper weight traveler is used for the shorter balloon length, it is too heavy when the balloon is longer. On the other hand, if the proper weight traveler is used for the longer balloon, it is too light for a shorter balloon. Thus the length of the traverse is limited to a span in which one traveler can adequately handle

both the longest and shortest balloon.

Various methods for obtaining uniform balloon tension have been tried throughout the years: variable speed drives, traversing the package instead of the ring rail, traversing the whole drafting section and thread guides, development of a balloonless spinning system, and use of balloon control rings. After considerable study, Whitin researchers decided that control rings provided the best answer.

The use of auxiliary rings to control the shape of the balloon of yarn, and hence its tension, was discussed and experimented with at least 30 years ago. The special combination of size, shape, position, motion, and operation of the control rings on the Piedmont frame was adopted after lengthy experiment, mathematical analysis, and consultation with recognized authorities.

The new frame has two control rings slightly larger than the spinning ring; a small thread guide is also used. Control rings and thread guide move simultaneously, the same distance, thus maintaining a fixed relationship with each other.

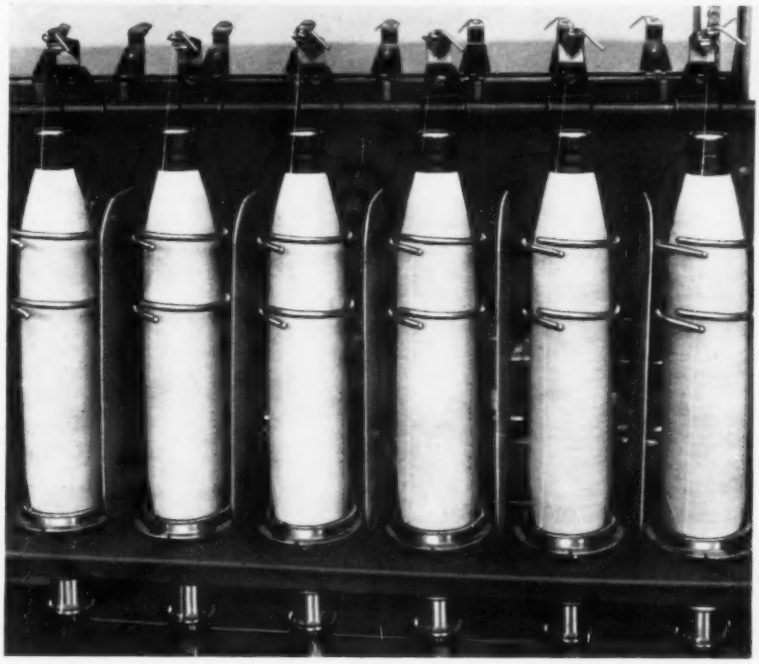
The control rings are so placed that the three balloon segments formed keep yarn tension within a minimum range through the whole traverse cycle.

The control rings and thread guides are easily folded back out of the way for doffing, by a crank inserted at the head end of the frame. The rings are self threading, and the thread guide is threaded as usual.

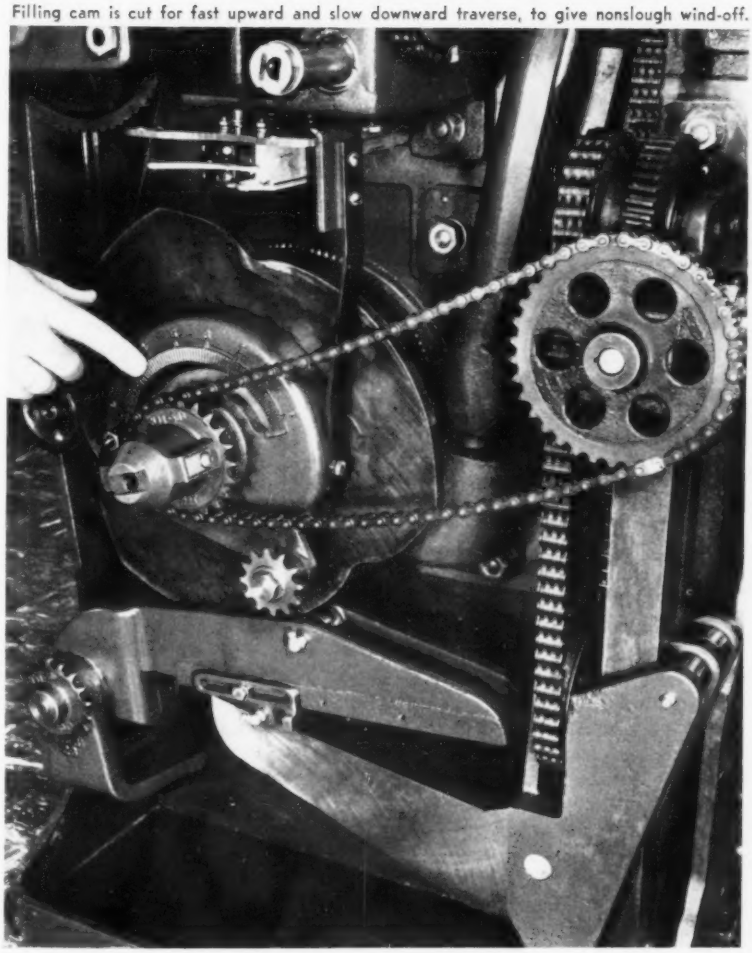
Selection of the correct traveler is simplified on the Piedmont frame, since inspection of the yarn balloon between the control rings reveals if the traveler is too heavy, too light, or about right.

Head End. The head end of the frame contains the main drive reduction gearing, all draft and roll gearing, cam, complete builder mechanism, and the actuating mechanisms for the chains and springs moving the ring rail and balloon control panel. Lubrication of head end gearing consists of greasing eight bearings in the builder once in six months; all other head-end bearings are sealed

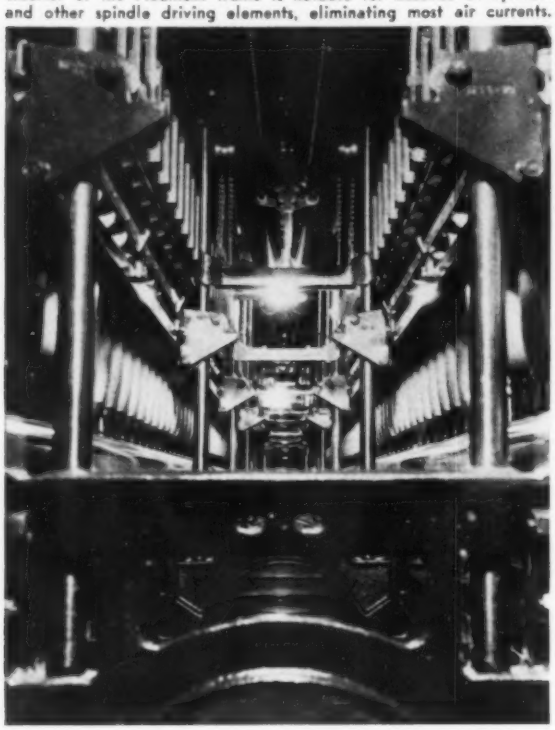
Close-up of balloon control rings. Balloon control makes a twelve-inch traverse possible.



Filling cam is cut for fast upward and slow downward traverse, to give nonslough wind-off.



Interior of the Piedmont frame is notable for absence of cylinder and other spindle driving elements, eliminating most air currents.



Heat from the motor located in the foot end of the frame is removed by Pneumakool system. The hot air can be recirculated or exhausted.

antifriction type, lubricated for life.

All change gears have the same bore, face, and pitch, permitting interchangeability of draft, twist, and lay gears, with only one wrench required for gear changing.

Four draft constants (1.33, 2.00, 4.00, and 8.00) are available on the new frame by changing two gears, with a draft range from 5 to 75. Selection of the desired draft change gear is reduced to multiplying the required draft by the constant being used.

Builder Motion. The Piedmont frame has a new builder design and a new arrangement for transmitting the cam action into motion of the ring rails and balloon control rings. The movement of the cam actuates a pivoted arm, which transfers its motion to another arm and a sliding member connected by a chain to a cross shaft. The shaft is given an oscillating motion to reciprocate the ring rails and balloon control rings.

Uniform counterbalance of the ring rails and balloon control rings, thread guides, and their supporting panels is obtained by springs having a cable connection with a compensating cam on the cross shaft.

It is claimed that particularly good winding-off characteristics are obtained with a filling cam and the new builder. A fast upward motion and a slow downward motion of the ring rail are used.

The chains for the ring rail motion are connected to ring rail brackets. Sliding brackets to which the ring rails are secured are provided with antifriction rolls and are traversed on fixed posts by chains actuated by the builder motion. The same posts also guide the motion of the balloon ring panels. Compensation for slight stretch and wear of the chains is made by take-up bolts.

Motor Heat Removal. A new arrangement (called "Pneumakool," and built by Pneumafil Corp.) is used to disperse heat from the motor, which is enclosed in the foot end of the frame. Cleaned air from the waste removal system passes over the motor and is then blown upwards, or directionally if desired. It can of course be either recirculated or exhausted from the room.

Other Features. The Piedmont frame is equipped with the Whitin Super-Draft system, which will handle fibers up to 3″ in length. Bottom rolls are case hardened and screw jointed; top rolls are antifriction in the front line, with nonlubricated rolls used in the middle and back lines. Except for several-year cycle lubrication of the front roll bearings, no lubrication is required.

Covered, wood-type reservoir inserts shield the bottom roll bearings, protecting the bearings from lint and providing the necessary amount of oil.

The Unitrol top arm weighting arrangement with precalibrated springs is used on the Piedmont, with a single line of cleaners.

Any overhead cleaner desired by the mill can of course be installed.

A pneumatic waste removal system is built integrally into the frame.

The Piedmont is available in either $3\frac{1}{2}$″ or 4″ gauge, with up to 288 spindles for $3\frac{1}{2}$″ gauge or 240 spindles for 4″ gauge, in increments of 24 spindles. Minimum difference between ring diameter and gauge is 1″.

Mill men can see the Piedmont frame in operation next month at the Greenville (S. C.) Show.

Vision tests cut accident frequency

at Abney Mills

Staff prepared Exclusive

ABNEY MILLS at Greenwood, Anderson, Belton, Newry, Greenville, Travelers Rest, and Woodruff, S. C., are served by a vision screening program which has effected a notable improvement in the plant safety record. Records show a definite correlation between production, safety on the job, and number of accidents.

Each year since the program was adopted the accident frequency rate has been reduced. In 1948 the rate stood at 11.8 per million manhours—last year it was 2.6.

Before testing the employees' vision, a group of eye specialists visited several Abney plants. The idea was to let them become acquainted with the different jobs and to determine the visual requirements for each job to set up a standard requirement for that job.

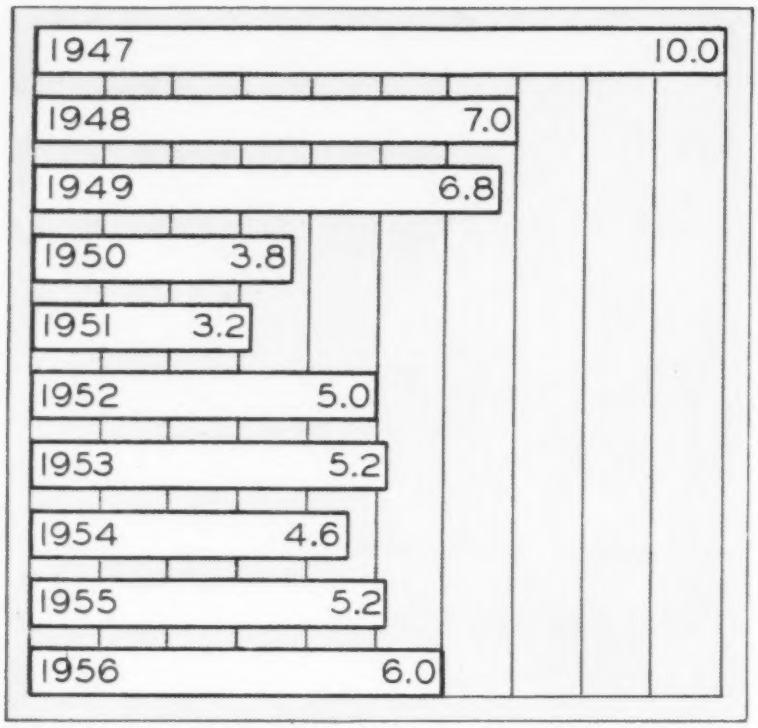
In 1948, with a view to reducing accidents, decreasing workmen's compensation costs, and to increasing production, several American Optical Co. Sight-Screeners were brought into the mills on a rental basis to be used in testing employees. The mill group is self-insured on workmen's compensation.

Ralph Genoble, Abney Mills safety engineer, takes a vision test so the TI editor can photograph the operation. In the top photo the registered nurse administers the test with a Sight-Screener which (1) checks each eye separately, (2) both eyes together, (3) depth perception, (4) muscle balance vertical; and (5) muscle balance lateral. Bottom photo: Nurse gives Mr. Genoble results of the test and at the same time records results on his physical examination record. All job applicants receive the test and are given results. In some instances applicants are checked for color blindness.

Applicants Screened. First, job applicants were tested to be sure of employing people with good sight. After several weeks, one person in each mill was trained to operate the machines. Instructing required about an hour, both to teach operation of the machine and the method of recording findings. The operator did not make any diagnosis.

Plant-Wide Testing. After the operators were trained, a machine was put in the overseers' office in various departments, and supervisors sent employees to the tester on a voluntary basis. Testing was started after the idea was sold to employees.

After finishing one shift, the operator continued to another. All shifts and all departments were



This chart shows the relative costs of the safety program at Abney, including the year 1947, the year before vision screening and other safety measures were initiated in a definite program. Note the low cost indicated for 1950 to 1951. According to experience in this instance, at least two years are required to get a safety program really started. Note also the increase in the years following 1951. Some of this increase is attributed to a revision in the South Carolina Workmen's Compensation Act that took place in March, 1953, a revision that brought the weekly rate of compensation from $25 to $35 for employees who sustained injuries severe enough to merit payment. There is also some increase in medical attention payments. Chart is based on an index of 10 for the year 1947.

covered, and the cards were delivered to an optometrist who made the necessary diagnosis. Then the cards were returned to the nurse with the indication of the individual's vision.

If vision were satisfactory, no report was made to the person. But if vision were faulty, the person was notified that it would be to his advantage to see an eye doctor. An encouraging follow-up was made to see that the person visited a doctor.

About two years later the same tests were made in every mill to note change and improvements. Many persons needed to change their glasses, and findings indicated that visual status was not static.

In selling the program, management set forth that results of tests would not affect job status. Employees paid for doctor care and glasses. 95% of employees liked the program and appreciated the opportunity to have their eyes examined on the job on company time.

Tests are now confined to new job applicants, and a nurse administers them. Visual requirements for most applicants are 20-40 in either eye. One form is completed for each test on the machine.

Abney has eight machines, and these machines are located at each clinic serving the mills. For example, at Greenville one clinic serves three mills; at Anderson, one clinic serves five mills; at Renfrew Bleachery, one clinic serves the mill, and at Woodruff, one clinic serves. The Poinsett Mill is served by a single clinic.

The $50 per year rent on each machine includes all service to the machine; however, it is now possible to buy them outright.

Safety Meetings. Each department on each shift has a committee of three members which alternates one member each month to make a weekly inspection of each department and conduct a 10-minute safety meeting each week. At the safety meeting the committee members discuss accidents that have occurred since the last meeting, and then make recommendations to the overseer based on results of inspections about guards on machines and similar items.

There is a general monthly meeting of safety engineer, superintendents, overseers, and second hands at each mill. The men discuss safety reports and any other pertinent subjects. These meetings and the visual screening program are credited with the over-all improvement in accident rate at Abney Mills.

According to Ralph Genoble, "If we have a safe mill, and the employees are working safely, production records are bound to improve."

Job vision requirements were set up by specialists. Note those of the spooler tenders.

JOB VISUAL REQUIREMENTS

Approved_____

Job Title SPOOLER HAND Date_____

Dept. SPOOLER General Class of Operations TEXTILE

Eye Protection Requirements: Impact ☐ Glare ☐ Injurious Rays ☐ Splashes ☐ Fumes ☐

Frame Style_____ When Needed_____

Special Color Vision Demands_____

Remarks_____

1 DISTANCE VISUAL ACUITY (BINOCULAR)		2 NEAR VISUAL ACUITY (BINOCULAR)		3 MUSCLE BALANCE		4 BINOCULAR VISION		5 DEPTH PERCEPTION (STEREOPSIS) MINIMUM PER CENT STEREOPSIS REQUIRED		6 COLOR DISCRIMINATION		7 VISUAL FIELDS	
20/10	A	20/10	A	NO MARKED IMBALANCE PERMISSIBLE	(A)	REQUIRED	(A)	100%	A	REQUIRED	A	GOOD FIELD REQUIRED	A
20/15	B	20/15	B					90%	B				
20/20	(C)	20/20	(C)			NOT IMPORTANT	B	75%	C	LIMITED REQUIREMENTS	B	FAIR FIELD ACCEPTABLE	(B)
20/30	D	20/30	D										
20/40	E	20/40	E			ONE-EYED PERSON ADEQUATE	C	60%	D				
20/50	F	20/50	F	NOT IMPORTANT	B								
20/70	G	20/70	G					45%	(E)	NOT REQUIRED	(C)	NOT IMPORTANT	C
20/100	H	20/100	H			NO VISION REQUIRED	D						
20/200	I	20/200	I					LESS	F				

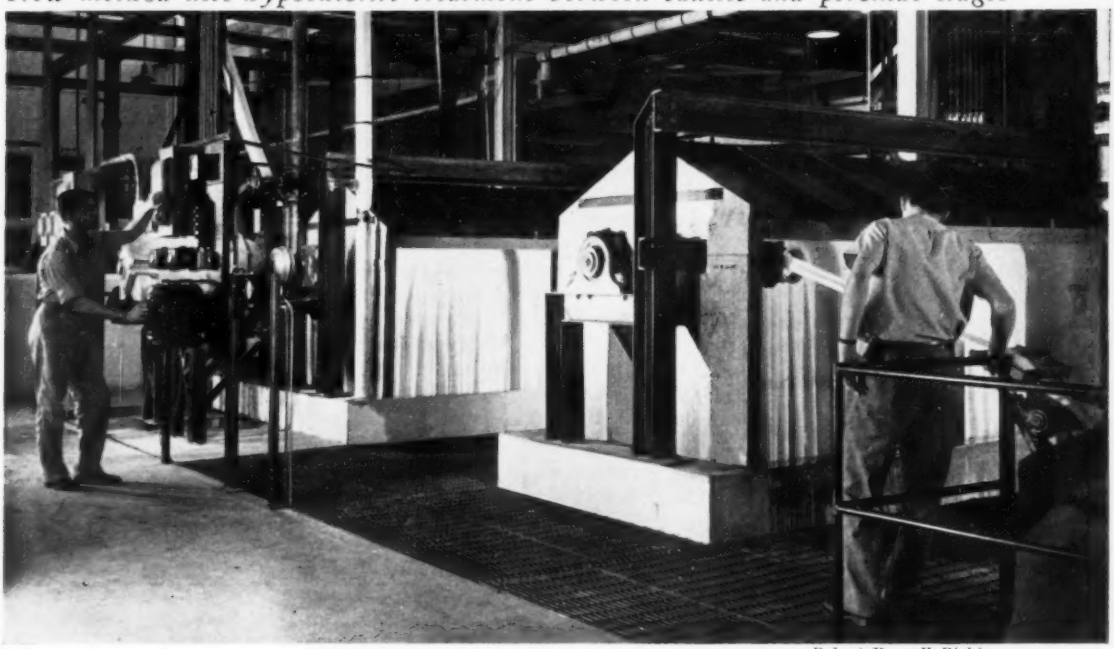
Signed_____ For Plant Signed_____

Title_____ Title_____

1	2	3	4	5	6	7

962 Copyright, U.S.A., 1945, American Optical Company Chart No. 1215E

New method uses hypochlorite treatment between caustic and peroxide stages



Robert Yarnall Richie

How you can cut your bleaching costs

by H. G. Smolens
Technical Services Department
Industrial Division
Pennsalt Chemicals Corp.

Exclusive

THIS is the third and concluding article in this series on reducing the costs of continuous caustic and peroxide steam bleaching. In the two previous articles* numerous changes and tests that will help accomplish this cost reduction were outlined. Some cotton finishing plants have been working along the lines suggested and have materially reduced their chemical costs and improved bleachery performance.

Now a new procedure is available which can bring benefits in addition to those already realized from the adoption of the suggestions made in the two previous articles. This new procedure, which involves the application of a hypochlorite treatment between the caustic stage and the peroxide stage, can readily produce a reduction of 50% or more in peroxide usage.

The idea of using both hypochlorite and peroxide in a single operation is certainly not new. For many years this has been the standard practice in this country for bleaching tubular cotton fabrics in string dyeing machines and for cotton hosiery in paddle or rotary hosiery dyeing machines. In some cases the peroxide bleaching chemicals are actually added directly to the hypochlorite bleaching after all or most of the available chlorine has been exhausted. In other cases, the hypochlorite solution is dropped and the peroxide bleaching chemicals are put into a fresh bath without any intermediate washing.

OUTSIDE the United States, and especially in Europe, the use of combined hypochlorite and peroxide in cotton piece goods bleaching has been fairly widespread. In the book "Introduction to Textile Bleaching"** (pp. 289-290), J. T.

*TEXTILE INDUSTRIES for May, 1957, pages 114-115; and March, 1958, pages 98-99.

**Published by John Wiley & Sons, Inc., New York, 1948.

Marsh refers to a British patent, No. 401,199, issued to Bohme in 1922. This patent describes a treatment with alkaline hypochlorite followed by treatment with alkaline peroxide, with no washing step between. There is also mention of a Korte process, owned by I. G. Farben, in which cotton goods are treated with an acid hypochlorite solution followed, without washing, by treatment with alkaline peroxide.

There are three types of hypochlorite bleaching solutions: alkaline, neutral, and acid. From a chemical and operating standpoint, the use of an acid hypochlorite solution, pH under 4.0, offers a distinct challenge. However, we do not yet know how to make up such a solution that will be usable under ordinary bleachery conditions. The make-up and use of alkaline hypochlorite bleaching solutions are well known. We believe that for the first time it is now possible to make up and use a neutral hypochlorite bleaching solution, pH 5.0-8.0.

It is well established that an acid, chlorine-containing bleaching solution—for example, a chlorine dioxide solution made with sodium chlorite — does not materially affect hydrogen peroxide solutions. We now also know that a neutral hypochlorite bleach does not affect alkaline peroxide solutions at normal peroxide saturation temperatures.

This discovery can be extremely useful in continuous cotton goods bleaching, since a neutral hypochlorite bleaching solution will whiten cotton goods, scoured or unscoured, in from 20 to 60 seconds. A treatment of this duration does not require an unreasonable amount of equipment or floor space and normally should not require additional manpower.

A WET TREATMENT of from 20 to 60 seconds is somewhat different from a single saturation, which may require less than 5 seconds. The goods need a wet, uniform contact with the hypochlorite for more than just the normal saturation time. To distinguish this treatment from a saturation, we call it a "chlorination."

Any hypochlorite treatment of cotton goods, if properly performed as part of a continuous bleaching process, can produce superior whiteness without lowering tensile or tear values. In some bleacheries it may be advantageous to use a neutral hypochlorite solution. In others an alkaline hypochlorite solution may be better adapted to the equipment and/or floor space available. If a new or improved bleachery is being planned for a finishing plant, this new type of continuous bleaching should be investigated before making a layout.

The introduction of a hypochlorite bleaching stage can mean a potential saving in chemical costs, due primarily to a lowering of peroxide requirements. The extent of these savings will depend on local conditions. In some plants it can be very large; in others it may not warrant the cost of necessary additional equipment and the trouble of working out a new procedure. Any major change in bleaching procedure, especially when production demands are pressing, is a troublesome period until sufficient experience has been acquired by personnel on the job.

Sufficient practical information and experience are now available to allow any cotton finishing plant to evaluate the advantages of introducing a neutral or alkaline hypochlorite bleaching stage into its continuous peroxide bleaching operation. The potential savings in costs and improvements are well worth looking into.

Direct dye study points way to easier shade matching, better control

■ DIRECT DYES should be divided into the following general classes, a research project recently concluded by American Cyanamid Co. has shown:

1. Those that decompose during boiling;
2. Those that are stable during boiling; and
3. Those that build up in strength on prolonged boiling.

Here is a summary of the study as reported in a recent issue of the company's publication, *Dyelines:*

More than a hundred direct dyes were investigated. Of these, 53 showed a loss in color value ranging from 5 per cent to 42 per cent, 29 increased in color value from 100 per cent to 222 per cent, and 28 showed little or no change over a six-hour boiling period.

The dyeings were made on spun-viscose rayon in porcelain beakers. These data were obtained by reflectance measurements of the dyed fabrics, using a modified General Electric type recording spectrophotometer. A one-hour dyeing at the boil was used as the control and given a value of 100 per cent.

A study of a large number of combination dyeings showed that build-up, stability or decomposition occurred whether the dye was alone, or present with other dyes in the bath. Accordingly, extensive experiments were undertaken to discover methods for controlling the decomposition of the dyes that normally decompose, and to find methods for accelerating the rate of buildup for those dyes exhibiting this property.

It was found that the decomposition could be controlled by the addition of selected salts to the dye bath. In particular, it was found that dye decomposition could be prevented or greatly retarded by the addition to the dye bath of certain ammonium salts at the start of the dyeing cycle, or by periodic additions of common salt.

The rate of color build-up was markedly accelerated by the addition of the same ammonium salts which controlled decomposition. It was observed that for effectiveness, ammonium thiocyanate stood out among the ammonium salts. It gave excellent protection to dyes that decomposed; it promoted substantial build-up; and it stabilized shades.

For each direct dye which was studied, the stability properties and the effect of ammonium thiocyanate on shade and strength have been evaluated and tabulated.* With these data it is hoped that the dyer will more easily achieve reproducibility from batch to batch.

*Copies of this table are available from American Cyanamid.—The Editors

by Howard Zibble
Safety engineer
Agricultural and Empire State Insurance Cos.

Exclusive

Most accidents aren't accidental

With the cooperation of management and employees, 50% or more of all mill accidents can be prevented

THE FREQUENCY of lost-time accidents has become a problem in many industries, and this is particularly true in the textile mill. In addition to workman's compensation rates bulking large as an overhead item, operating efficiency and employee morale are extremely sensitive to accident occurrence. Management has a large stake in the success of accident prevention campaigns.

Studies conducted by the National Safety Council have indicated that 50% or more of all accidents can be prevented. What must be overcome is the tendency to think of accidents as manifestations of bad luck or a malevolent fate. Were this the case, there would be no such person as the accident-prone employee. Yet any statistical study with a sufficient sample will show a frequency of mishaps within a certain group of subjects.

As high as 33% of all accidents in any particular concern will happen to 10% of its employees. This 10% will represent accident-prone persons to whom mishaps repeatedly happen. If bad luck is involved, it demonstrates a consistency beyond mathematical probability.

WE REALIZE the simple truth when dealing with our children. Two phrases seem to be repeated constantly—"Watch what you are doing!" and "Look out for the .....!" The amazing thing is that the best scientific theory of today comes right back to these warnings for prevention of accidents. Phrased more formally, accidents arise because of unsafe actions or unsafe conditions or a combination of both. Perhaps an example will illustrate these two factors.

A porter, carrying a heavy machine part, falls on the stairs, permanently injuring his leg. Judgment was brought in for $20,000. It comes out in court that the nose plate on one step had worked loose and that the porter, straining under the load, had not noticed the danger. An unsafe condition and an unsafe action—in this case it was the combination that produced the accident. Either one could have done it unaided.

Convinced that accidents don't just happen, management and employee can cooperate on a program aimed at these two causes of accidents. An efficient campaign will substantially reduce the accident rate in any operation.

THE FIVE CONDITIONS in textile mills most often leading to accidents can be summarized in this way:

1. Spillage creating slippery areas.
2. Bad housekeeping—bobbins on the floor, etc.
3. Insufficient lighting.
4. Unattended machines.
5. Obstruction in traffic areas.

THE FIVE ACTIONS that often team up with disastrous effect are:

1. Failure to look where you are going.
2. Improper lifting of heavy objects.
3. Oiling or repairing machinery in motion.
4. Careless use of matches or cigarettes.
5. Lack of caution in working on or near machinery in motion.

Very often we find an underlying psychological reason for the superficial unsafe action. This can range from a deep emotional disturbance to a dissatisfaction with environment. The former is best handled in the original employment interview. The prospective employee may have a history of frequent accidents, or the interviewer may sense trouble in the applicant's background.

The dissatisfaction with environment is often closely tied to employee harmony, making this area one of primary concern to management. Human relations are an important item in any successful safety program.

PHYSICAL SURROUNDINGS also can contribute to these unsafe actions. The textile mill is basically a dangerous environment. The very nature of the processes necessary for manufacturing textiles can induce boredom and apathy. This must be counteracted by such physical factors as proper ventilation, good lighting, and clean surroundings. An unattractive plant dulls the normal alertness of any employee. Management must recognize this, and must help employees to keep senses sharp.

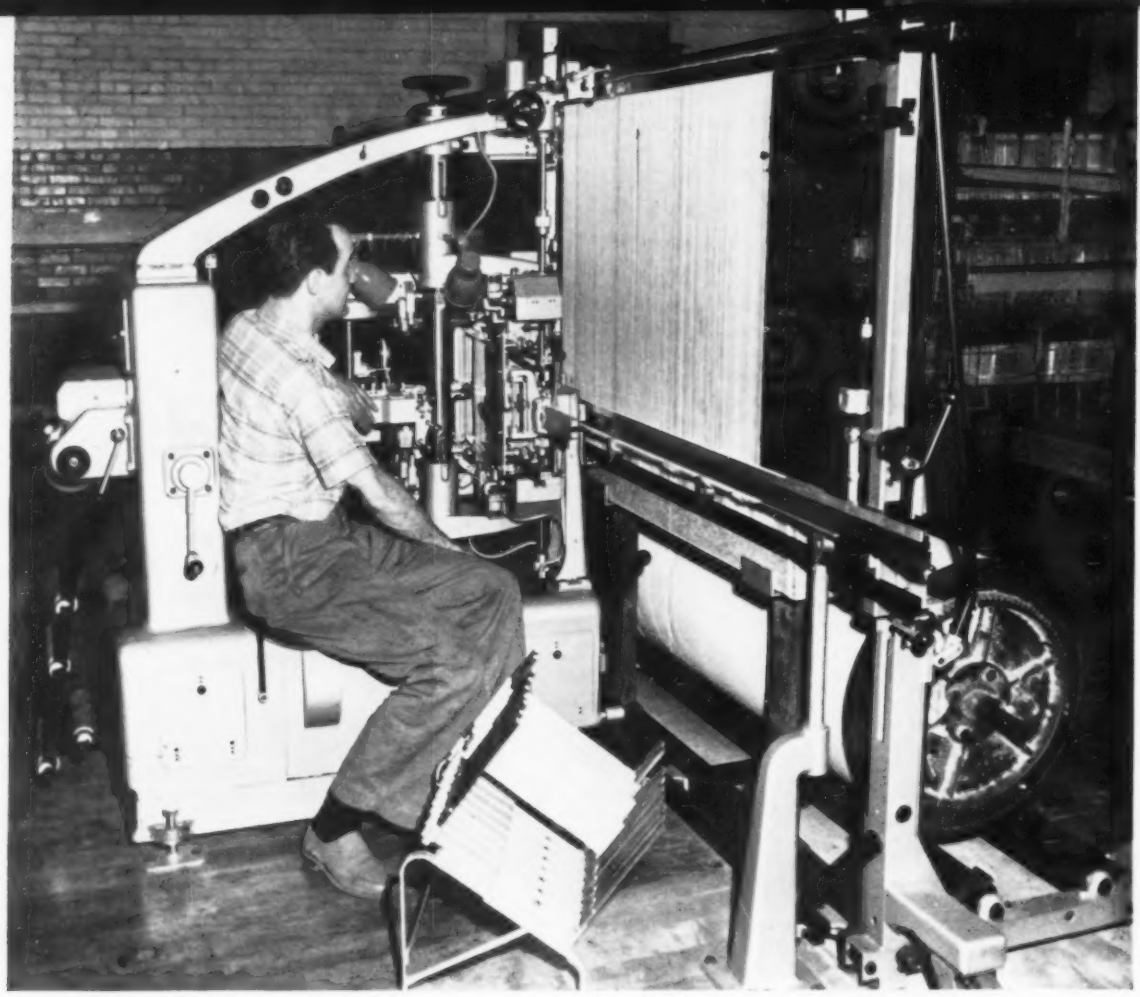
Granted the harmony of a working staff interested in accident reduction, the desire must be implemented by an organization. One excellent measure is the formation of a safety committee staffed by a director with a monitor in each danger area. The monitors are responsible for correction of unsafe conditions in these areas. They must be alert for the dangerous conditions previously listed as well as those unique to any particular mill.

The director's duties include conducting safety meetings with general discussions of past accidents and future prevention. He also conducts new-employee safety orientation with on-the-job, personal guidance. Where unsafe actions are observed, it is the director's job to call them to immediate attention.

First-aid lessons are also conducted by the director. A minor injury in the slasher room, improperly treated, can develop into a major casualty. All employees should be thoroughly schooled in the whys of accident reporting and emergency first aid.

The safety incentive award has achieved good results in many mills. The employee feels a personal interest in his good safety record, and forms the attitude necessary for its continuance. Another valuable weapon is the safety poster. Prominent display in traffic areas will have a definite, favorable effect on accident records.

A good safety campaign has dollar and cents value to management. The employee team that pulls together on accident prevention will pull together on other projects.



SAVED: 400 man-hours a week

when pattern preparation was mechanized at Joanna Cotton Mills Co.

Staff prepared Exclusive

A NEW TYPE of drawing-in machine and method of pattern preparation is in use at Joanna Cotton Mills Co., Joanna, S. C. Joanna was the first cotton mill to utilize the machine, the other being a mill producing synthetics. The machine saves about 400 man-hours each week and is expected to pay for itself in two and one-half years.

As a time-saver, this drawing-in machine has a distinct advantage over drawing in by hand. While a good operator can set up a weave pattern in four days, the machine can do the job in two hours. At Joanna 10 to 15 two-harness patterns are set up in a day.

Another advantage of this automatic drawing-in machine, mill officials pointed out, is the fact that special loom parts were not required, eliminating the necessity for making an expenditure of several thousands of dollars when the changeover was made.

When the drawing-in unit was first put into operation, the mill was confronted with the necessity for an end-and-end lease on any warp to be drawn in. Investigation showed no one leasing cotton yarns at the slasher end-and-end, but many mills were using such leases on blends and synthetics, especially synthetics, with leasing machines being utilized to speed the operation. So a leasing machine, was ordered for Joanna. In the meantime, drawing-in operatives made the lease by hand.

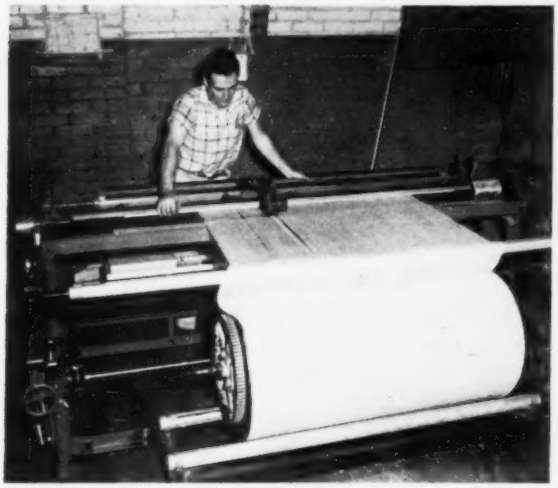
So, the complete drawing-in operation at Joanna requires three pieces of machinery and four steps to produce a single pattern.

The machines, supplied by Uster Corp., are:

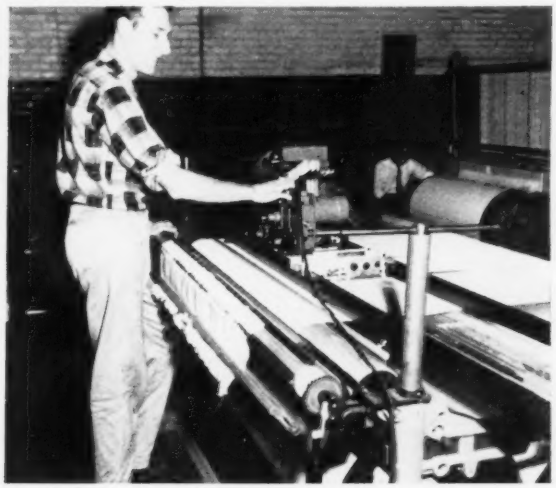
1. Warp leasing machine
2. Drop wire inserting machine
3. Drawing-in machine

The four steps in the process

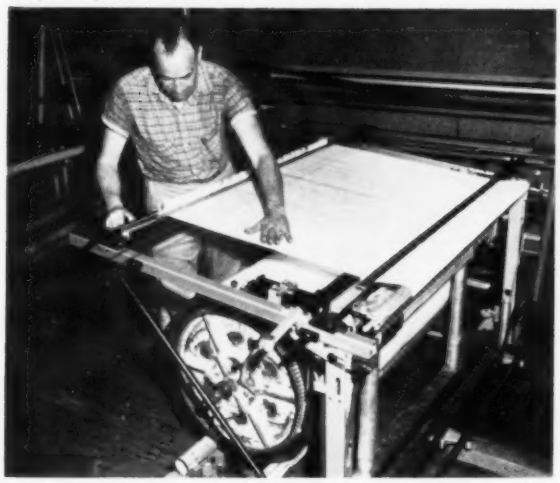
First step in pattern preparation at Joanna is insertion of an end-and-end lease in the warp. Machine does it automatically.



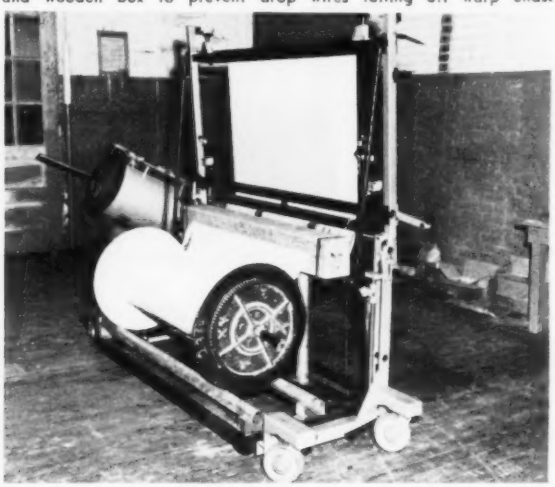
Next, an open-end-type drop wire is automatically placed on each warp end by this "Dropper-Pinner" machine.



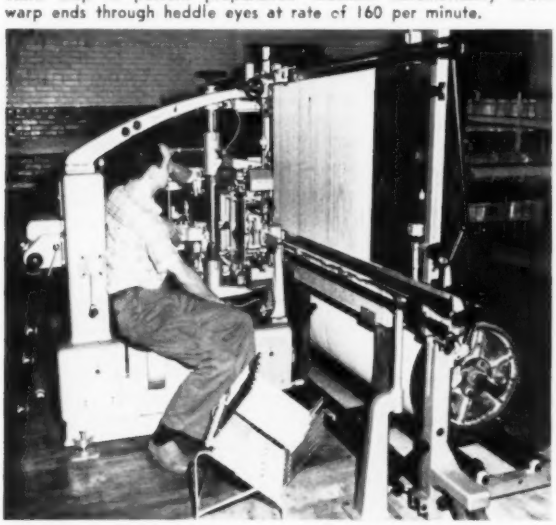
Warp is made ready for drawing-in machine by tensioning ends in special portable frame.



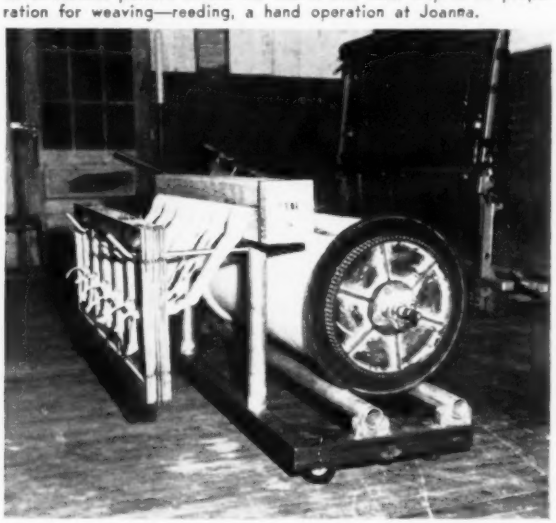
Warp awaits its turn at drawing-in machine. Note tensioned ends and wooden box to prevent drop wires falling off warp ends.



Third step in pattern preparation—machine automatically draws warp ends through heddle eyes at rate of 160 per minute.



Seven-harness pattern awaits the fourth and final step in its preparation for weaving—reeding, a hand operation at Joanna.



Close-up photo of the warp leasing operation. Note lease strings at lower left. About 40 minutes are required to lease a 6100-end warp.

are as follows:

1. Leasing
2. Putting drop wires on yarn
3. Drawing yarn into heddles
4. Reeding

Procedure. First, the warp to be drawn in is placed on a special castered stand and rolled to a position behind the leasing machine. On a 6100-end warp leasing requires about forty minutes. Little labor is needed.

The unit is started after the warp is properly threaded and tensioned, and it runs without attention. A clock indicates ends leased, and if the number comes up less than the known ends in the warp, the operator starts the search for doubles.

After leasing, the warp goes to the "Dropper Pinner" which puts open-end-type drop wire on each end, while utilizing as many banks of drop wires as necessary. One man looks after this, for it is necessary to stack drop wires on the loading device which acts as automatic feeder.

After "pinning," the drop wires are housed in a special rig to allow ease of handling as well as security in keeping them on their respective ends.

Remaining on the original castered stand and suitably threaded, the warp is set behind the drawing-in unit. The wood frames are removed from the heddles and the individual shafts in the drawing-in machine are mounted and the machine started. It draws in the warp ends at a rate up to 160 threads per minute on about four heddle shafts.

On multi-harness dobby work, using up to 25 harnesses, it would be necessary to slow the unit down to perhaps 140 or 150 threads per minute. Currently it is averaging more than 25,000 threads in eight hours.

The upward trend in evidence is expected to reach a goal of 40,000 threads in eight hours for drawing-in operations within the next several months. Theoretically, one should be able to draw in up to 72,000 threads in eight hours.

After the warp has been drawn in, it must be manually reeded. This requires from three to four operatives, in addition to the five employees used for operating the leasing, drop wire, and drawing-in machines.

There have been no operating difficulties to date, and mill personnel like the unit as well as its work in dobby weaving. The operatives say that a machine-made pattern is superior to one made by hand. The mill was able to use old heddles, except when worn, bent, or their useful life expended. Operatives undergo a training period ranging from eight to ten weeks.

Tare is "stumbling block" to improved bale packaging, mill man says

■ A MAJOR stumbling block to improving bale packaging is the problem of tare, according to F. M. Arthur of Fulton Bag & Cotton Mills.

Testing of new bale packaging has been narrowed to two or three materials, and the National Cotton Council said it plans to do field work with another material, an adaptation of the presently used jute bagging, Mr. Arthur explained. The program has been delayed, he said, pending results of a cost study underway by the Department of Agriculture. The Council, aware that bale covering improvement necessitates additional costs, wants to determine if such additional costs are justified.

"Many industry people and packaging firm representatives feel that net weight trading will be necessary before any real improvement can be made," said Fulton Bag's cotton buyer. "Gross weight trading in effect stifles competition in the packaging field and discourages research efforts to improve packaging," he continued.

"Our foreign competitors buy their cotton on net weights, and synthetic manufacturers buy their raw stock on net weights. Since our industry is now in a battle for survival, it seems essential that we start buying on an equal basis with our competitors.

"The 22-pound allowance for tare simply means that we have a loss of six or seven dollars per bale before the cotton is opened. That's hard to overcome.

"Of course, if net weight trading should be adopted, some rigid specifications would have to be established to prevent use of inferior materials that would afford no protection, or might even be harmful to the cotton."

Careful instruction and supervision of the operative are as essential as proper settings and adjustments of the feeder itself.

Veteran woolen carder shares his experience in

OPERATING CARD FEEDERS

by William J. Crofts
Exclusive

ALTHOUGH it was a great improvement over hand feeding of woolen and worsted cards, the original Bramwell automatic feeder (named for its inventor) was a crude machine when compared with the improved feeder of today.

However, the basic principles of both are the same—namely, a hopper with a spike apron lifts the stock up (after a comb has evenly removed the excess stock) and delivers it to a scale pan by either a doffing apron or roll. All of these actions are controlled by a cleverly designed assembly that automatically stops delivery of stock to the pan when the desired amount of stock has been deposited in it, dumps the stock from the pan onto the feed apron of the breaker card, and then again starts delivery of stock into the pan to complete the cycle.

The first feeders had comparatively small, triangular-shaped hoppers that were wide at the top and tapered to a point at the bottom. With the hopper so shaped, the spike apron, when lifting the stock, furnished enough energy to keep the mass of stock rolling or moving so that the spikes would take bites of the stock over a larger area, thereby equalizing any variation in the moisture content.

Any hopper must supply this rolling action.

In the larger modern hoppers that are practically square in shape, the lifting action of the spike apron alone is not sufficient. So a horizontal slat apron in the bottom of the hopper provides an extra push to augment the lifting action of the spikes and to keep the contents of the hopper rolling when the spike apron is delivering stock to the scale pan. The large hoppers make it possible for one operator to tend more machines.

Uniform Loading of Spike Apron Essential to Good Carding. Assuming that the stock to be carded has been well blended and the emulsion evenly applied throughout the mixture, then the stock is ready for the feeder hopper. Whether the stock is taken from storage bins or from bales, any large matted chunks of stock must be broken up by hand. A mass of matted chunks in the hopper presents an uneven surface to the spikes. Hence the uneven surface pressure will load some spikes heavily while others carry much less stock.

Best results are given by a spike apron evenly loaded all the way across its surface, since this condition makes a more even feed on the table apron as the stock enters the breaker card feed rolls. This, in turn, makes for a more even web from the doffer, and this naturally will effect a more even feed on the broad band feed table.

Another point to consider is that even feeding all the way across the first breaker gives more even carding and more uniform wear and tear on the card clothing. If

the first breaker feed is heavy in the center of the card and lighter at each side then the points of card wire will choke at the center of the card and will cause rough carding and excessive wear on the wire.

Unfortunately, even distribution of the stock in the feed hopper must depend largely on the human element, and careful instruction and supervision of the operative are as essential as are proper settings and adjustments of the feeder itself.

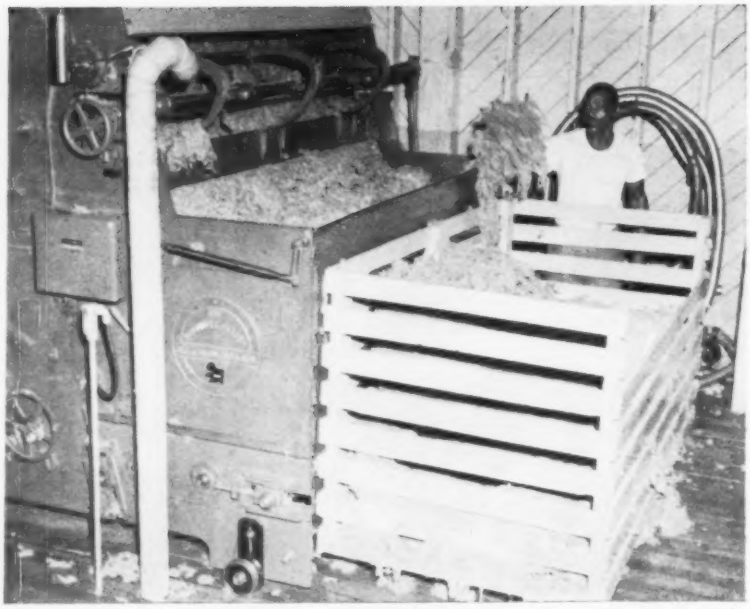
Setting the Spike Apron Comb. Accurate comb setting is very important but often carelessly done. To effect an even setting to the spikes the blade must be straight and in line with the spike apron.

Any bent teeth should be straightened; if there are very many broken teeth, it is best to install a new blade.

Set the blade so that there is ¼" clearance between the teeth and points of the spikes. This is a safe setting and one which permits the comb to remove enough stock from the spike apron to cause it to run a long time to fill the scale pan. As mentioned before, maximum tumbling of the stock is desirable because it tends to equalize any variation in moisture content of the stock. Mill tests have shown that the stock loses approximately 15 per cent of its moisture while being tumbled in the hopper.

The ¼" setting is good when processing the average run of blends used in making woolens and gives more even roving weights than does a more open setting of the comb. However, with some of the long, tough stocks such a close setting is not practical, as the comb will be sticking continually and stopping the feeder.

When using long, tough-fibered blends, set the stroke of the comb as low as possible and increase the length of the stroke. A low stroke is one in which the arc of the stroke is much longer between the point of contact with the spikes and the lowest point of the stroke than it is from the spikes to the upper limit of its stroke. This is the same as the follow-through of a long-hitting golfer or the follow-through of a home-run slugger. This lengthened and low stroke gives the comb more power to cope with long, tough stock.



Whether the stock is taken from storage bins or from bales, any large and matted chunks must be broken up by hand. Large masses of stock present an uneven surface to the spike apron with the result that some spikes are heavily loaded while others carry little or no stock—a condition which is not conducive to uniform feeding. Note the square shape of hopper of this modern feeder.

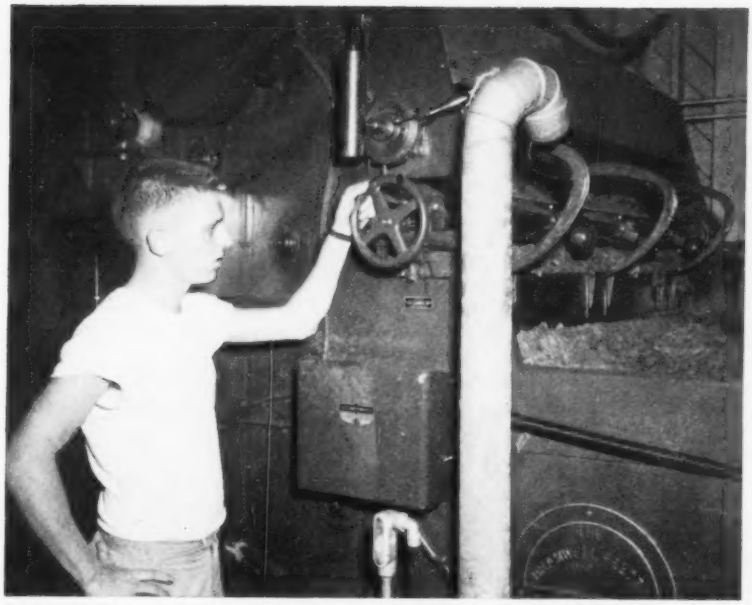
Modern feeders are equipped with hand wheels for moving the comb to or away from the spikes. A straight mark or groove on square blocks supporting the comb bearings, together with a series of equally spaced marks on the comb supporting bed plate of the feeder frame, enables the carder to set the comb safely to any position while the card is running.

How to Set Comb on Older Feeder While Card Runs. There are still many of the older type feeders in use which can be changed so that the comb can be set safely and accurately with the card in production.

Using a piece of flat iron or hard wood ¼" thick as a gauge, set the comb blade evenly to the spikes all the way across the apron. Make a chisel or saw mark straight up and down at the center of the chair castings supporting the comb bearings and a corresponding mark on the slotted T-shaped castings supporting the comb assembly. Both marks must be exactly in line. Perhaps it would be best to remove the comb after it is carefully set to the spikes and make a saw mark on both castings at one sawing. A series of saw marks on the outer edge of the slotted T-shaped castings will make the positive and accurate setting of the comb a simple matter.

With the comb set at the close-to-spikes position, some form of a stop should be installed to prevent the comb being moved in close enough to cause damage to both the spikes and comb teeth. Drill a small hole all the way through the slotted T-shaped casting and across the slot and insert a metal pin so that pin is close up against the cap screws that thread into the chair castings supporting the comb. Pin acts as a stop to prevent too-close settings through carelessness.

Spike Apron Should Operate Steadily. The wood moldings firmly attached to the inside of the hopper frame (set close to and extending up and down both edges of the spike apron) serve two purposes: (1) these triangular-shaped pieces hold the spike apron in position and prevent the spikes from kicking back and locking into the comb teeth; (2) they keep bits of stock from working around edges of and dropping inside the apron to pack into the apron roll bearings



Setting of the comb to the spike apron on modern Bramwell feeders like the one pictured above is easy and can be done while the machine is running. Fixer simply loosens cap screws which hold the bearings in position and turns handwheel as shown here. Older models like the one pictured below can also be modified to permit adjustment while the machine is running. The author tells how to do this in the text on the opposite page.

or wind around the bottom roll.

Inside the spike apron are three adjustable rolls to keep the apron from sagging away from the comb, and these can be adjusted so that the three rolls in conjunction with the wood moldings keep the spike apron operating steadily in a perpendicular line.

About 1/16" clearance between the moldings and the apron is sufficient to prevent any binding of the apron. That side of the spike apron facing the comb must be held steadily, especially when close setting of the comb is used. Then, too, a steady spike apron means a more even flow of stock.

Constant Pressure of Stock on Spike Apron a "Must." Constant stock pressure against the spike apron is necessary for uniform roving weights.

On several occasions the writer has checked the change in roving weights when pressure of stock against the spikes was greatly increased because the operative had packed the feed hopper too full. One time a fixer reported that roving from one card weighed 110 grains when the standard weight was 100 grains per 50 yards of roving. Several armfuls of stock were removed from the too-full hopper, leaving it about three-quarters full. Then, without changing any weights at the feeder, enough time was allowed for stock to pass through to the spools. Another test was made and the roving weights had returned to standard.

This shows that increased stock pressure against the spikes can change roving weights as much as 10 per cent and even more in many cases. A lowering of the stock pressure, of course, has the opposite effect of causing the roving weights to decrease. The greatest weakness of the modern automatic feeder is still the human element.

The function of the compensator is to maintain the same stock pressure at all times. This simple device takes over when the level of the stock drops in the hopper. If it is installed in the right position and at the correct angle, it will run the stock out of the hopper without any change in the roving weights and with little or no attention from the operator.

Unfortunately, the compensators cannot control any increase in roving weights caused from a packed hopper, for under such conditions the compensators go out of action. Never fill the hopper higher than its sides.

The compensators should be so adjusted that the pressure the panels exert as they push the stock to the spikes is the same as the normal stock pressure when the hopper is full. Then this beneficial guardian of the stock pressure will go into action when the level of the stock drops to three-quarters of the full mark.

Stock Pressure Test. To determine if the pressure is being maintained regardless of the level of stock in the hopper, first check the time taken to fill the scale pan when hopper is full by watching the position of the pusher board on table feed. When the scale pan tips down, make a chalk mark on the frame to show the position of the pusher board at this time. Then take about one half of the stock out of the hopper and check the time taken to fill the scale pan. Check three or four fillings of the pan.

If the pusher board is at or close to the chalk mark each time the scale pan tips, then stock pressure is correct. If the pusher board is not at the chalk mark and the time required to fill the hopper is excessive, there is not enough pressure on the stock and corrective

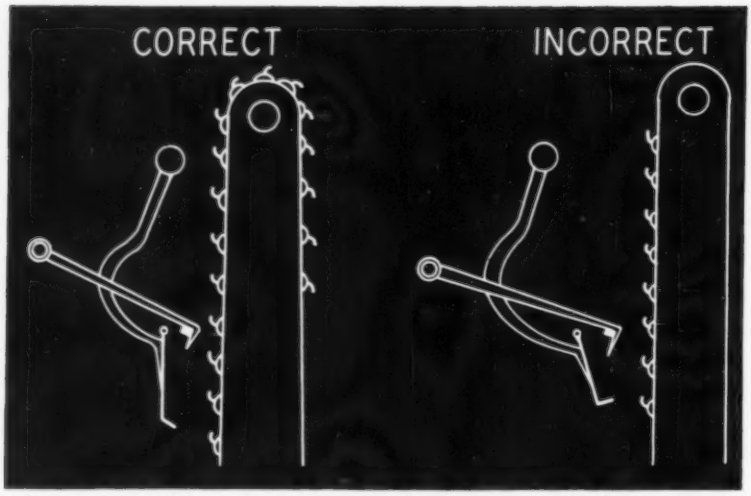


FIG. 1. When installing a compensator or regulator on an old model feeder to provide uniform stock pressure at all times, the author recommends that it be positioned as shown in the left sketch above, not so far away as pictured at the right.

action should be taken.

Tips for Installing Compensators. The installation of compensators is comparatively simple, but a few basic principles must be observed to get uniform stock pressure at all times.

When the panels are closest to the spikes (about four inches away), a line drawn from the center of the overhead supporting rod down along the inner side of panels should be parallel with the spike apron.

Some makes of feeders have the spike apron hung in a vertical position, and there are other makes in which the spike apron has a decided forward incline. In either case the holes for the supporting rods should be drilled in feeder frame four inches out from the spikes or even closer if desired.

If hung in this position, the panels will hug the stock against the spikes down to the last scale pan full (See Fig. 1).

If the supporting rod is set too far away from the spike apron (and there are many such installations), the lower edge of the panels will be much closer to the spikes than the upper edge. This means the panels are sloping away from the spikes and stock will boil over the top edges.

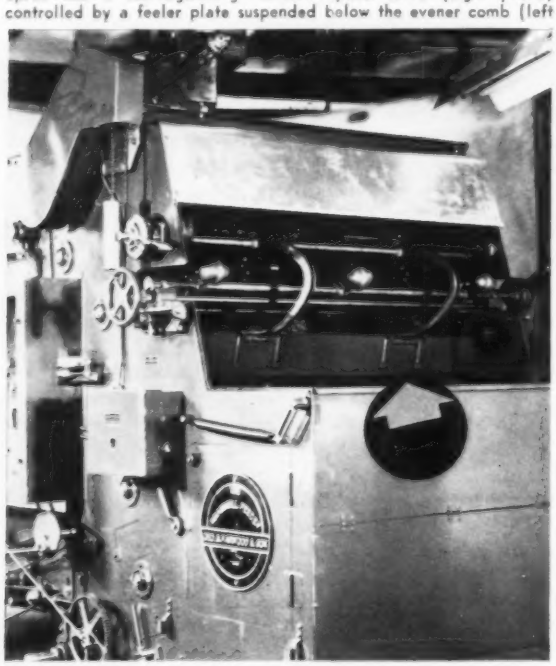
Furthermore, in its swing up to the spikes, the last part of the arc of the swing will be uphill, and with the force of gravity counteracting the weights there will be much lost pressure.

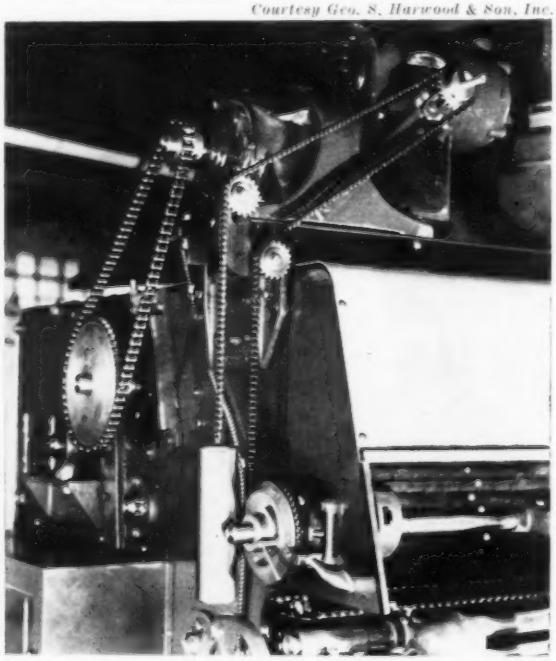
Before installing the compensators, the stroke of the comb must be set at its lowest point and clearance of about $\frac{1}{2}$" allowed between comb arms and the top edge of the panels when the compensator panels are closest to the spikes.

Compensators are usually made with the panels covering nearly all the width of the spike apron, with only two inches or less space between panels. And the stock often

Note in these two photos of a new Model G-2 Bramwell card feeder the arrangement for insuring a constant rate of delivery by the spike apron from the beginning to the end of each lot. The spike apron has a self-regulating variable speed drive (right photo) controlled by a feeler plate suspended below the evener comb (left photo, arrow pointing to it) to gauge the quantity of stock in the hopper. Response of the feeler to any depletion of the stock supply automatically causes the spike apron to be speeded up and to be slowed down upon replenishment.

Courtesy Geo. S. Harwood & Son, Inc.





bunches at the center of the apron, allowing one-half of each panel to press against the same mass of stock with little or no stock at outside ends of panels.

The writer has found that by sawing 2″ of material off each panel (making a 5″ or 6″ gap between them) the panels work independently and more effectively with little bunching of stock at the center of the apron.

Two panels are enough for cards up to 60″ wide, but for the 72- or 84-inch cards there should be three panels with sufficient clearance between them to allow each one to work independently of the others.

Adjusting and Maintaining the Weighing Mechanism. There must be an interval of elapsed time between the instant when the scale gets its weighing of stock and tips down and the time when the automatic assembly dumps or empties the scale pan. The upright pusher board on the table apron takes each load of stock dumped by the scale pan and pushes it slowly forward. And as the movement of the board is much faster than the surface speed of the apron, each dump of the stock is firmly packed against preceding dumps, thereby building a compact layer of stock.

It is generally agreed that the filling of the scale pan should be timed to the moment when the pusher board is at the extreme point of its forward stroke. This is the halfway point of the weighing cycle, and in the writer's opinion the time allotted for filling the scale pan should never be less.

The old type scale pan (now obsolete) was rigidly fastened to the scale frame, and it was possible for the center of gravity to shift. If more stock were thrown forward toward the feed roll side of the pan, the center of gravity would move forward, causing the scale to tip down too soon. If the bulk of the stock settled on the opposite side of the pan, the center of gravity shifted toward the feeder, causing a slightly heavier weighing of stock.

The center latch scale pan is a vast improvement, since the pan itself is a separate unit pivoted at one point to the scale frame, thereby holding the center of gravity constant regardless of the position of the stock in the pan.

Both types of scales are pivoted or balanced similar to a grain or an apothecary's scale, with hardened triangular-shaped metal pins resting on V-shaped supports. After long use grooves appear on the supports and affect the scale sensitivity. These grooves must be removed by filing with a small rat tail file.

Frequently it is found that the bottom of new V-supports is so sharp that it does not allow a free pivoting action. Filing the bottom of the V to a U shape allows the triangular-shaped pins to balance or pivot freely (see Fig. 2). Ball bearings are now available for pivoting the weighing scale, and if cleaned and oiled periodically they rarely give trouble.

There must not be any drag on any part of the weighing scale. At the instant that the pan receives its weighing of stock, the scale should trip. And once it starts to tip downward it should go all the way with a snap, instantly stopping the spike apron and the flow of stock. If there is any pause or teetering on the way down, all working parts should be inspected

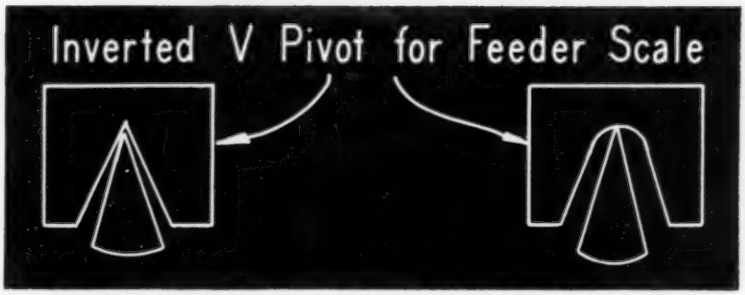
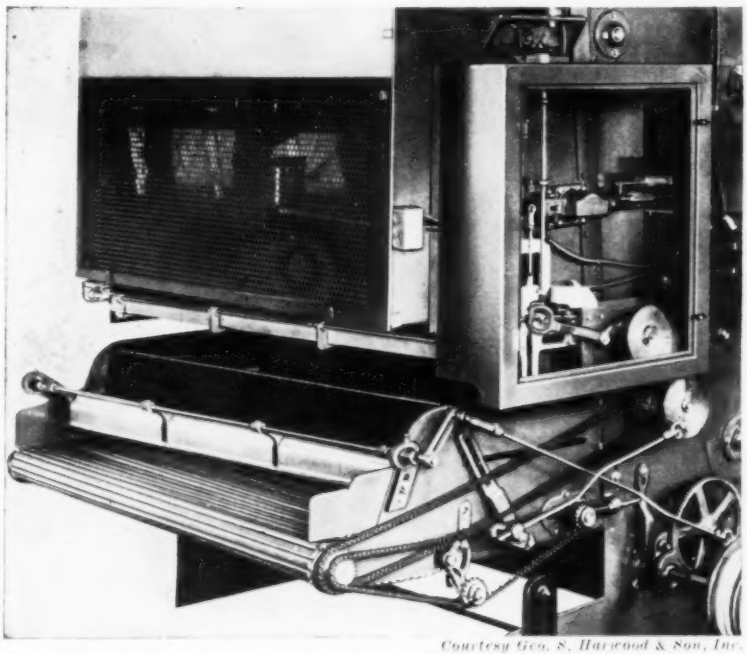
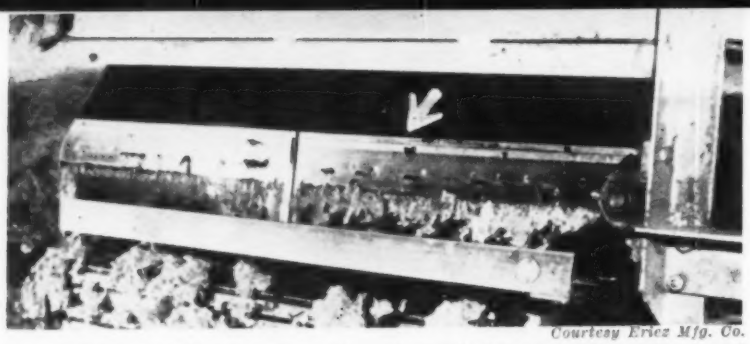


FIG. 2. If the weighing mechanism does not function properly after installing new V-shaped supports for the scale pan, check for binding at this point because of the condition pictured in the left sketch above. Filing the bottom of the V to a U shape allows the triangular shaped pins to balance or pivot freely.



Courtesy Geo. S. Harwood & Son, Inc.

Observe the transparent cover provided on this Model G-2 Bramwell feeder to keep fly and dirt off outside working parts of the weighing mechanism. Also note the angle at which the pushboard and paddleboard are set over the delivery slat apron; they are parallel with the diagonal scale pan so that dumpings are presented at an angle to the feed rolls, thereby eliminating any hill-and-valley delivery to the card.



Courtesy Eriez Mfg. Co.

A magnetic separator (arrow points to it) may be installed above the spike apron to catch stray iron (bale buckles, nuts, bolts, etc.) before it has a chance to damage machine parts and cause fire.

to find the cause as this is certain to produce uneven roving weights.

Sometimes one of the adjustable weights on the scale arms or part of the scale frame may rub against the feeder frame. It could be at the pivoting point. Sometimes the scale arm meets with too much resistance when tripping the pawl that engages and stops the clutch.

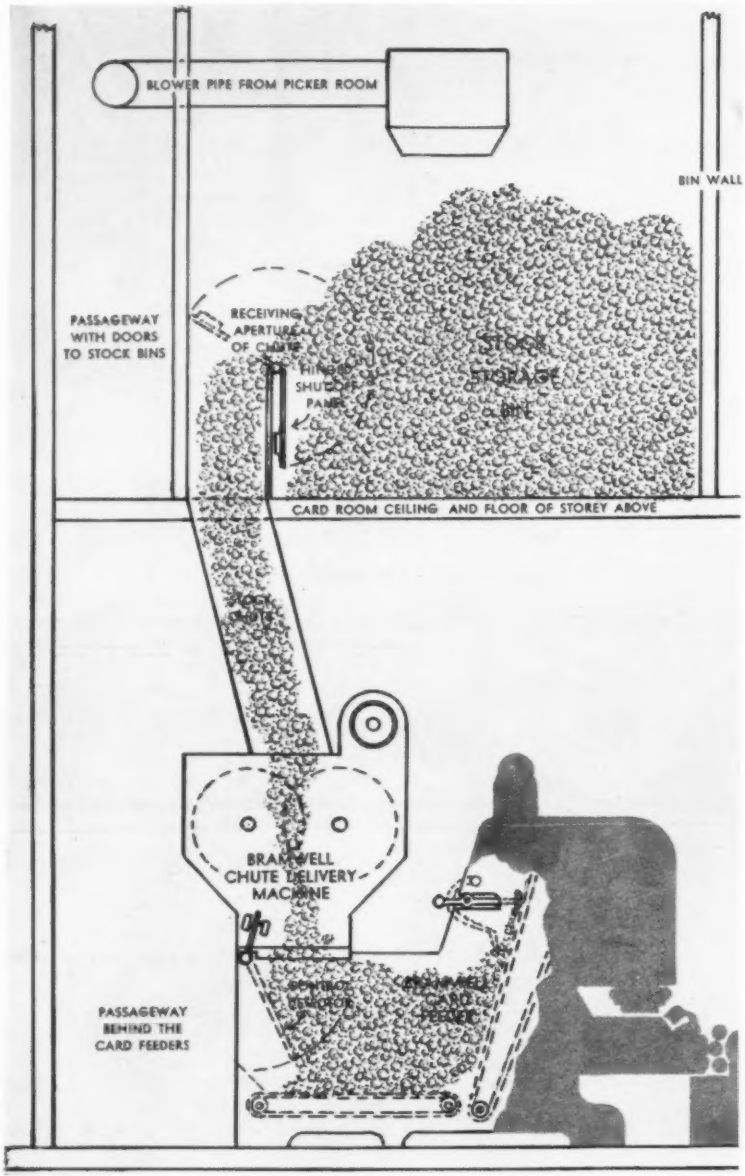
Standing at the feeder and facing the finisher card, one finds on the right hand side of the hopper an adjustable weight on the arm of the scale frame. This is the balancing weight. On the left side of the hopper is another adjustable weight on the arm of the scale frame, the arm bearing a graduated series of marks. This is the weight used to control the amount of stock going into the scale pan.

To balance the scale, move this control weight all the way forward towards the scale pan. Then, if necessary, adjust the balancing weight on the right arm of the scale frame until the scale, with pan completely empty, teeters or balances of its own weight. Then move the control weight back to the desired position.

In order to make a compact feed on the table it is best to set the control weight at a point where the scale pan fills at least three-fourths full before tipping down.

It is impossible to get uniform roving weights unless the table feed is of uniform density—free of thick and thin places. If there are any gaps or thin places between the dumps of stock when dropped on to table apron, then the automatic assembly controlling the number of dumps must be speeded up.

Roughly for every 15″ of forward progress of the apron three



A semi-automatic arrangement for assuring uniform stock level in the feeder hopper. During the normal operation of the feeder, the control detector in the feeder hopper responds to a small degree of stock depletion by swinging slightly forward and upward, thereby automatically putting the chute delivery machine into operation. The resulting automatic transfer of stock from the chute into the hopper depresses the detector once more when the proper degree of replenishment has occurred, and the delivery machine is thus stopped again. From time to time stock stored in the bin on the floor above the card room is manually loaded into the open top aperture of the chute in loose condition so that it will slide downward by force of gravity alone into the delivery machine as needed. As the last of a lot is loaded into the chute, the chute's top aperture is closed with the shut-off panel so that the bin can be cleaned and filled with the next lot while the end of the first one runs out.

Courtesy Geo. S. Harwood & Son, Inc.

dumps is right for the average woolen blends. However, when using very compact and fine short stocks, more dumps are needed. On the other hand, extremely fluffy stocks will need fewer dumps. Lofty stock will pile up, making a crowded feed that is unmanageable if too many dumps are dropped in ratio to the speed of the table apron. All feeders, even those of ancient vintage have equipment for reducing or increasing the number of dumps per minute.

When the scale pan gets its full weighing of stock and tips down, stopping the delivery of stock, the doffing apron kicks or throws some extra stock into the pan. It is at this point and time in the weigning cycle that unevenness originates with any variation in the stock pressure against the spikes.

When the hopper is too full, pressure increases and the spikes take a larger bite on the stock. Consequently, the doffing apron throws more stock into pan at the instant it tips down than it does on a weighing made with the stock in the hopper at a normal or lower level when spikes are not so heavily loaded with stock.

It is wise to take the largest possible weighings, as this practice reduces the percentage of weight variation from the above cause.

If the pan takes a 16-ounce weighing and there is a variation of one-half ounce in the throw off by the doffing apron during a series of weighings, the variation is 3.125 per cent. If each weighing is only 8 ounces, the percentage of variation doubles to 6.25 per cent. Thus, we see the importance of large weighings and maintaining the same stock pressure at all times.

Keep Spike Apron Clean. Almost as important as even stock pressure is a clean spike apron. When spikes become feathered with fibers they naturally take a shallower bite on the mass of stock. And as the spikes gradually become feathered, the time required to fill the scale pan increases to the extent that the card must be stopped for a time-consuming job of hand cleaning the spikes. Then, when changing to a lot of another color, spikes must be cleaned to prevent mixed colors.

The doffing apron is equipped with leather strips, and if they are set deeply into the spikes, deep notches are soon worn into the leather to give a side-brushing action that will keep the spikes perfectly clean. A clean spike apron is one factor that helps to make an even table feed all the way across the card.

Instead of an apron some feeders are equipped with a large doffing roll with wood cleats firmly attached at intervals across its surface. Strips of leather attached to cleats contact the spikes to doff the stock. These give excellent service. The only repair needed is replacement of the leather strips when leather wears down. This may be every year or every two years, depending on usage and type of stock.

Clutch Trouble. Nearly all clutch troubles are the direct result of overloading, and this usually can be traced to one or more of the rolls of the spike and doffing aprons binding either from lack of oil or from lint and dirt working into the bearings. To quickly locate the trouble spot, disconnect the gears that connect the two aprons and turn each apron separately by hand to determine which apron or roll is binding.

If it is not overloaded, the modern clutch will give long trouble-free service. Of course, small parts will wear out.

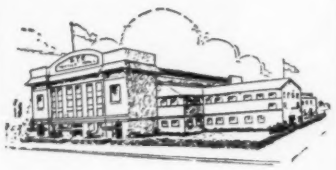
System Assures Uniform Stock Level in Feeder Hopper. Some mills are using a card feeding system which practically eliminates the variation introduced by the human element. With this installation, which consists of a hopper suspended from the ceiling directly above the card feeder, the storage bins must be located on the floor above the card room. The stock is fed down through a rectangular opening which is the full width of the card into the storage hopper.

Feeler fingers continually press against the mass of stock in the hopper of the card feeder, and when the level of the stock drops to a predetermined point, these fingers (by means of a long rod) engage a pawl and ratchet that sets in motion the feeding of more stock from the overhead hopper into the card feeder.

Properly adjusted, this equipment will maintain the stock at the same level at all times in the hopper of the automatic card feeder and will insure the same constant stock pressure against the spikes. Results are excellent, and one operator with this reserve supply of stock can take care of more feeders.

With one large opening in the floor careless operators can force large matted chunks of stock through into the storage hopper and sometimes jam the feeding mechanism. For a 60″ card two 12″ holes in the floor, smoothly lined with sheet iron and spaced to divide the width of card evenly, would force the feed operator to break up any matted stock in order to feed the stock through these smaller openings. Three 12″ holes should be used for wider cards.

Make your plans to go to the
GREENVILLE SHOW



Textile Hall, Greenville, S. C.
OCTOBER 6-10, 1958

See TI's October issue for a complete preview of the show with pictures of equipment to be on display and a handy floor plan of the exposition hall.

GOT YOUR SHOW TICKETS?

You must have either a season pass or one-time-admission ticket to enter Textile Hall.

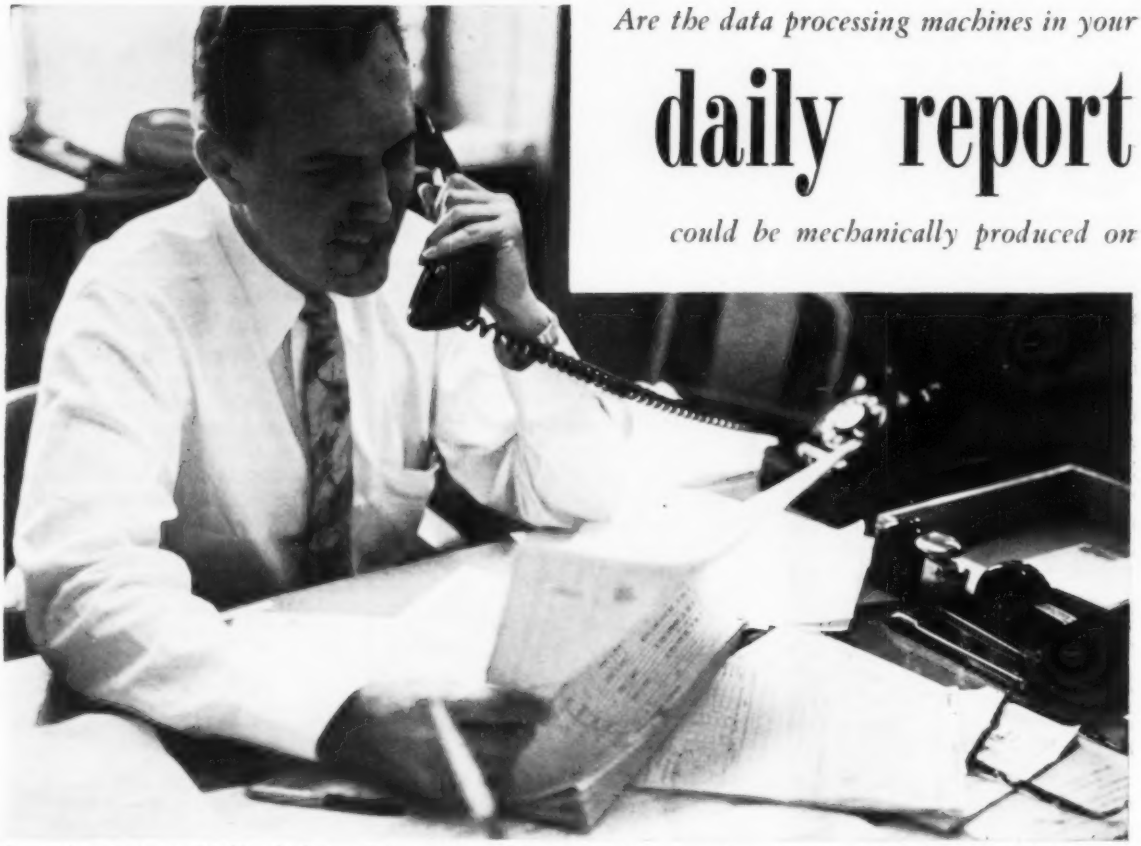
FOR TICKETS, ask your suppliers' representatives or write to the Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

FOR SEASON PASSES, write to Miss Bertha M. Green, director, Southern Textile Exposition, P. O. Box 1323, Greenville, S. C.

Are the data processing machines in your

daily report

could be mechanically produced on



By simply referring to his file of "Status of Inventory and Sales" reports (see reproduction below), this Fulton salesman was able to give his prospective customer accurate information, including exact delivery dates, on the telephone. Obviously he is pleased.

FROM: FULTON BAG AND COTTON MILLS, ATLANTA, GEORGIA

STATUS OF INVENTORY & SALES

PRODUCTION SCHEDULING

DATE .....

DATE	COMMODITY	STYLE	FINISH CODE	FINISH	WIDTH	WIDTH DEC.	SPECIAL CODE	INVENTORY	DUE DATE	TOTAL OBLIGATION	PAST DUE OBLIGATION
5 08 8	12	592	001	G	030	2	000	19373	6 8		
3 11 8	12	592	001	G	031	1	000	2735	6 8		
2 25 8	12	592	001	G	031	2	000	829	6 8		
1 28 8	03	592	001	G	032	1	000	160	6 8		
4 21 8	12	592	221	FP	030	1	000	31557	6 8	42250	32250
4 16 8	12	592	221	FP	030	2	000	220	6 8		
4 14 8	12	592	233	FRF	030	1	000		6 8	12495	12495
2 04 8	12	594	001	G	032	1	000	621	6 8		
5 12 8	12	594	001	G	033	1	000	134701	6 8		
1 07 8	12	594	001	G	033	1	000		9 8	20000	
1 07 8	12	594	001	G	033	1	000		10 8	20000	
1 07 8	12	594	001	G	033	1	000		11 8	30000	
1 07 8	12	594	001	G	033	1	000		12 8	30000	
4 10 8	12	594	001	G	033	2	000	1700	6 8		
1 28 8	12	594	018		032	1	000	780	6 8		
1 28 8	03	594	099	D RAT	032	1	321	9092	6 8		
1 28 8	03	594	100	D LF RAT	032	1	322	1500	6 8		
1 28 8	03	594	05	D LF & DDT	032	1	322	1022	6 8		
2 04 8	12				032						

Staff prepared Exclusive

WHEN THE need arises to cut costs and streamline operating methods, management areas involving administration and paper work are not often considered to be a cost center of substantial importance for potential reduction. Attention is more frequently directed towards the modernization of production facilities and subsequent savings which can be realized through an overall improvement of the manufacturing function.

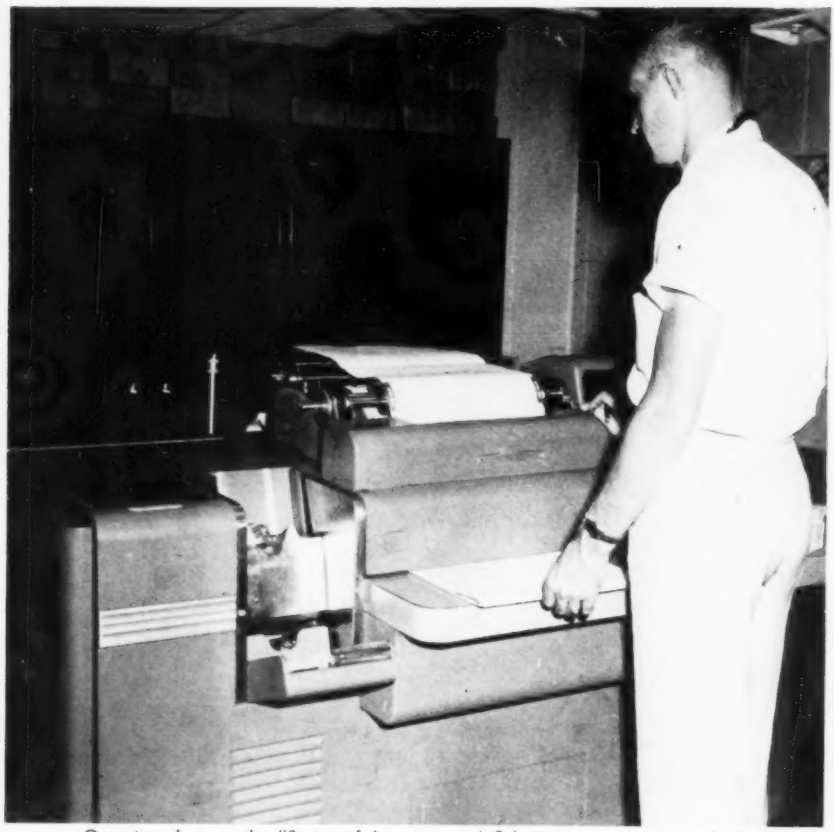
Actually, both administration and manufacturing should be considered together for the maximum in savings and benefits. Efforts towards streamlining and cost cutting should be expended on every function which affects the profit picture, whether it exerts a direct or indirect influence. In recent years, however, due to steadily increasing clerical costs and the complexity of the administrative function, there has been a definite trend toward keeping an ever firmer and steadier control over administrative costs.

In reviewing its record of recent accomplishments, which included a rise in profits and stockholders' equity, increased sales in the face of a sagging textile market, and the retirement of all short-term bank loans, the management of Fulton Bag & Cotton

mill fully utilized? Study of paperwork at this plant revealed that a

# of inventory condition

existing equipment with a net direct payroll saving of more than $10,000 *a year*



Operator observes the "Status of Inventory and Sales" report as it is mechanically produced on the tabulating machine from the punched cards visible in the rack at the left. Four copies of the report are made for distribution as follows: (1) sales department; (2) production control; (3) warehouse; (4) tabulating department file. Report is easy to analyze as may be seen by examining the portion reproduced on the opposite page.

■ While this article deals with a data processing system in a 2500-loom company, it is important to note that companies much smaller than this are using profitably punched card accounting and control procedures.

A high-style synthetic weaver, for instance, having less than 1000 looms and less than 500 employees, is utilizing punched card equipment to handle record keeping in the following areas: payroll and all related work, production statistics and efficiencies, quality control, grey stock inventory (packed and open), raw yarn inventory, accounts receivable, accounts payable, order status, production control, loom scheduling, and in-process inventory. This work is being performed on a basic set of punched card equipment, and there is still time and capacity available for additional applications. This firm is planning to install spare parts and supplies inventory control, warp status control, and further production control work.

Small yarn and thread companies are also using profitably punched card procedures to aid management in better and more factual mill operations.

While large companies may find punched card accounting profitable on one or two applications because of the large volumes, the smaller companies normally must mechanize several applications, such as the inventory control system described here, to prove it economical.

Mills can point to many an innovation which contributed to a generally favorable picture.

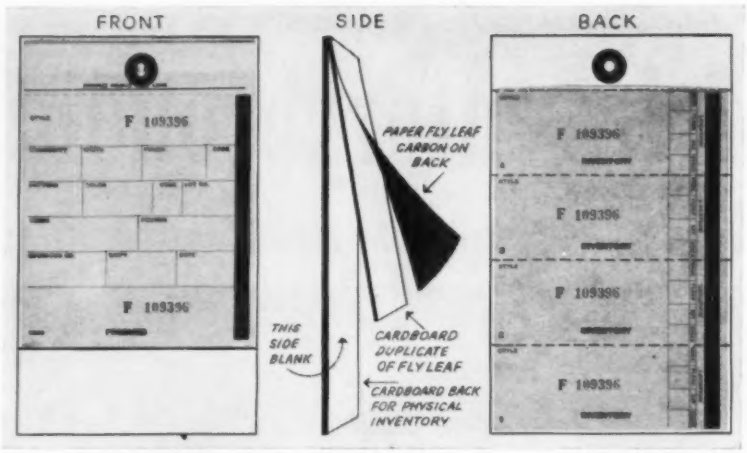
Partial credit must be given to a concerted program of tightening up, streamlining, and revision of existing systems and procedures. Assistance and counsel in the formulation and implementation of this program was placed in the hands of Werner Textile Consultants, and more specifically, its systems and procedure staff, who were to realize immediate, effective reductions in administrative costs and personnel.

Mill Needed Better Inventory Control System. One of the major areas in need of over-all improvement was in Fulton's inventory control. The manual system in use at the time was found to be inadequate, expensive, and unwieldy. In order to improve customer relations, management set as its objective a system to obtain information on inventory quantities, availability, and delivery more accurately and promptly.

In the face of a declining textile market and because of increasing competition it became imperative to streamline systems and procedures, and set up efficient controls so as to serve Fulton's customers more efficiently and reliably.

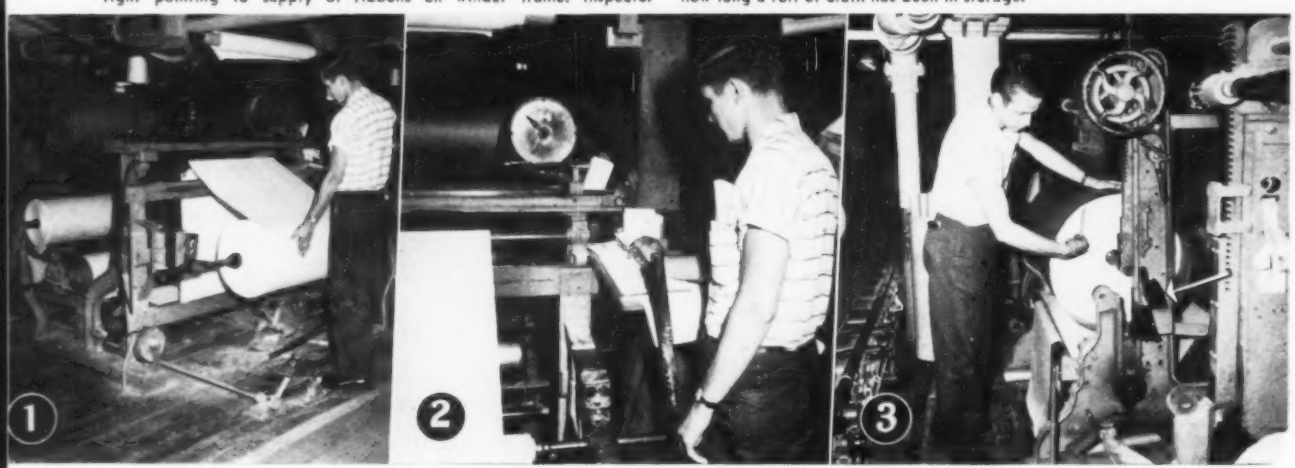
The findings of the consulting firm disclosed that a good deal of information necessary for inventory control was being produced

Keystone of Fulton's new inventory control system is this identification tag which is attached to each roll of fabric at the inspection winders before it is sent to the warehouse (see photos 1 through 6 below) and remains on the package until it is shipped to a customer (see photos 1 through 6 on page 96). Note here in the side view of the tag that it consists of three parts. The paper fly leaf on the face of the card (see front view) is used by the mill's tabulating department as a source of information on fabrics manufactured and placed in storage (see photo 5 in the series below). The cardboard duplicate of the fly leaf remains with the roll of cloth to identify it until the goods leave the mill. The back of the card (see back view) also remains with the cloth and is designed to expedite physical inventories. When an inventory is ordered, warehousemen simply tear off the bottom stub of the tag on each roll of cloth in storage. Stubs are collected and sent to tabulating department for preparation of the inventory report.



CLOTH MADE . . . INVENTORY CREATED

1. Cloth is re-rolled, inspected, and measured. 2. Identification tag is partially filled out by inspector. 3. Tag is temporarily affixed to roll of cloth pending weighing operation. Note white arrow at lower right pointing to supply of ribbons on winder frame. Inspector fastens one of these ribbons to the core of every roll of cloth to denote when it was made. Color of ribbon used is changed every eight weeks; consequently, warehouse personnel can tell at a glance how long a roll of cloth has been in storage.



mechanically in the form of production, quality control, and sales reports. With this information available, goals were immediately set up to provide Fulton with a new automatic and mechanical inventory control system, for which 75% of the cost in maintaining such system was already being incurred in supplying the aforementioned data.

What New System Should Provide. The objectives of the new inventory control system were:

► 1. The inventory should be run daily, in order to accomplish its true purpose of supplying accurate, current information and control.

► 2. Proper control paths should be set up to make it as accurate as possible.

► 3. It should lend itself to future billing via punch cards.

► 4. It should supply sales management, sales/production control, and warehousing with the information needed for each operation with a minimum amount of additional effort and paperwork.

► 5. A continuous check on the age of piece goods in inventory was required in order to avoid the expenses incurred when goods were handled on a last in-first out basis.

► 6. Information obtainable from a proper inventory control system must be adaptable to simple summarization so that management might obtain the benefits of "exception" reporting and control.

► 7. Management confidence in a punch card system for inventory control must be attained and maintained through continuous, accurate reporting.

With these objectives in mind, the administrative staff of Fulton, together with the consulting firm, set to work.

Installing the System. To insure the accuracy of the inventory report, proper control paths were set up at the onset. It was determined that the inspection winders would be the best initial control point for both the grey and the finished inventory, and consequently complete checks were established on yards over winders,

pieces, and pounds at these points. Outside purchases were completely rechecked against receiving book entries. Relief of inventory through billing was also rechecked against copies of the piece goods ticket which was torn from each piece or bale as it was put through shipping.

The over-all control for this was located in the mill's tabulating department which is equipped with International Business Machine Corp. punched card accounting machines.

Without any additional equipment, and with a few changes in the clerical force of the tabulating department, it became possible to run a daily inventory control on punched cards, with net direct payroll savings (over the manual system) of more than $10,000 a year.

Status of Inventory and Sales. This type of control is based on the fact that all types of production, receipts, and conversion of merchandise is accounted for by means of preparing a punched card from the identification tag which is attached to each roll, bale, or carton of fabrics (see the accompanying illustrations). This card serves the purpose of obtaining production records, usage reports, and shipping documents. The card then represents a perpetual inventory; and, by means of summarizing, it is used to prepare the Daily Status of Inventory and Sales report.

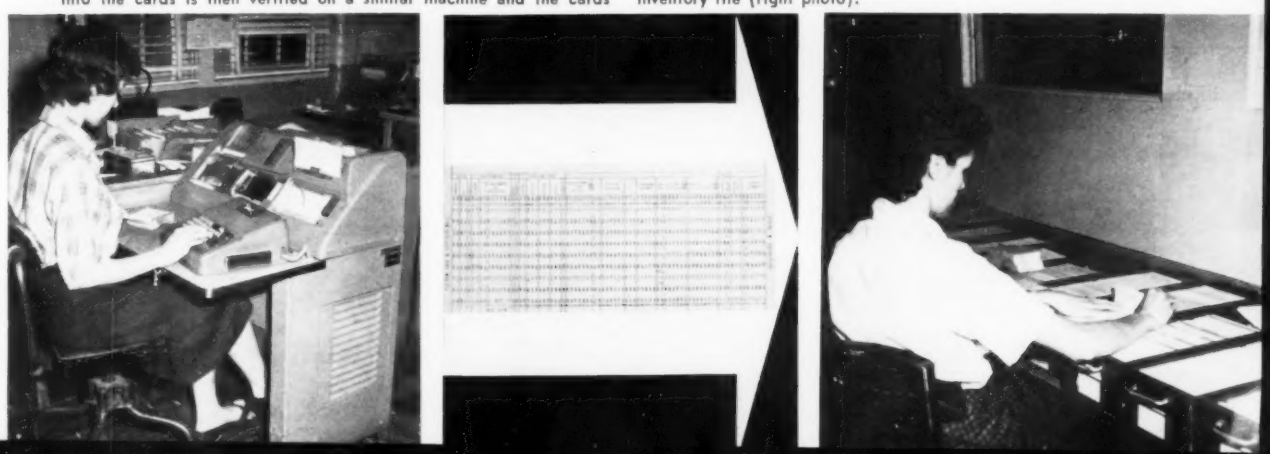
This report is explained as follows:

Orders as written are sent to the tabulating department as they are typed (see photos at top of page 96). There they are key punched into an Obligation Card which shows style of merchandise, due date, quantity sold, and due date of shipment.

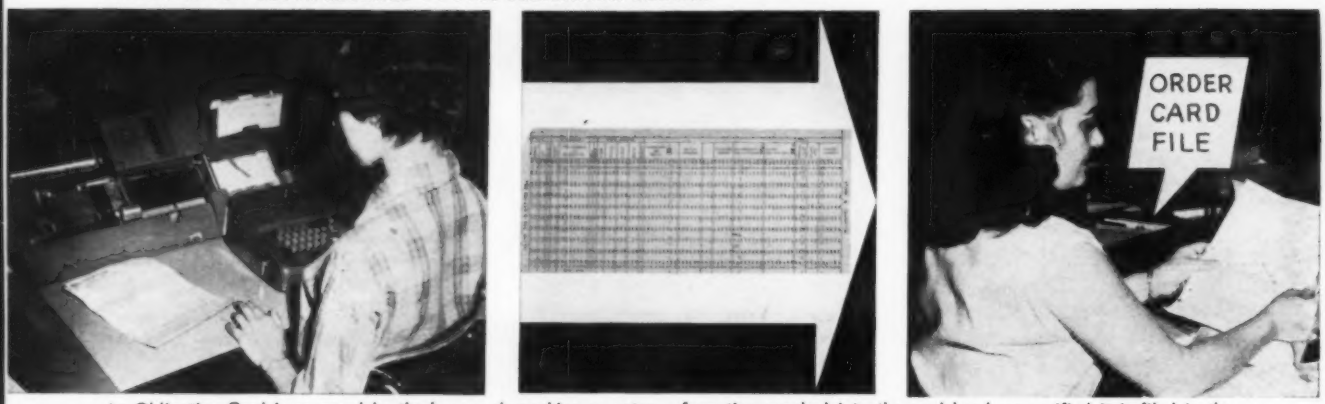
The Production Cards are key

4. Cloth is weighed, weight recorded on tag, and tag attached to the "age ribbon" on core (black arrow points to it). 5. Fly leaf is detached from tag and given to inspection department clerk who sends it, along with others, to the tabulating department where a punched card is prepared for each roll of cloth and placed in the inventory file as shown in the photos below. 6. Palletized load of cloth is moved to the warehouse for storage pending shipment to a customer.

When a batch of fly leaves from the inspection department is received in the tabulating department, it is given to a key punch machine operator (left photo) who makes a Production Card from each fly leaf (center photo). Accuracy of the information punched into the cards is then verified on a similar machine and the cards sent to a sorter where they are grouped by style of goods. Having been sorted in this manner, the cards then go to the tabulating machine (photo on page 93) for daily production or activity listing. Cards are then sorted again by ticket number and placed in the inventory file (right photo).

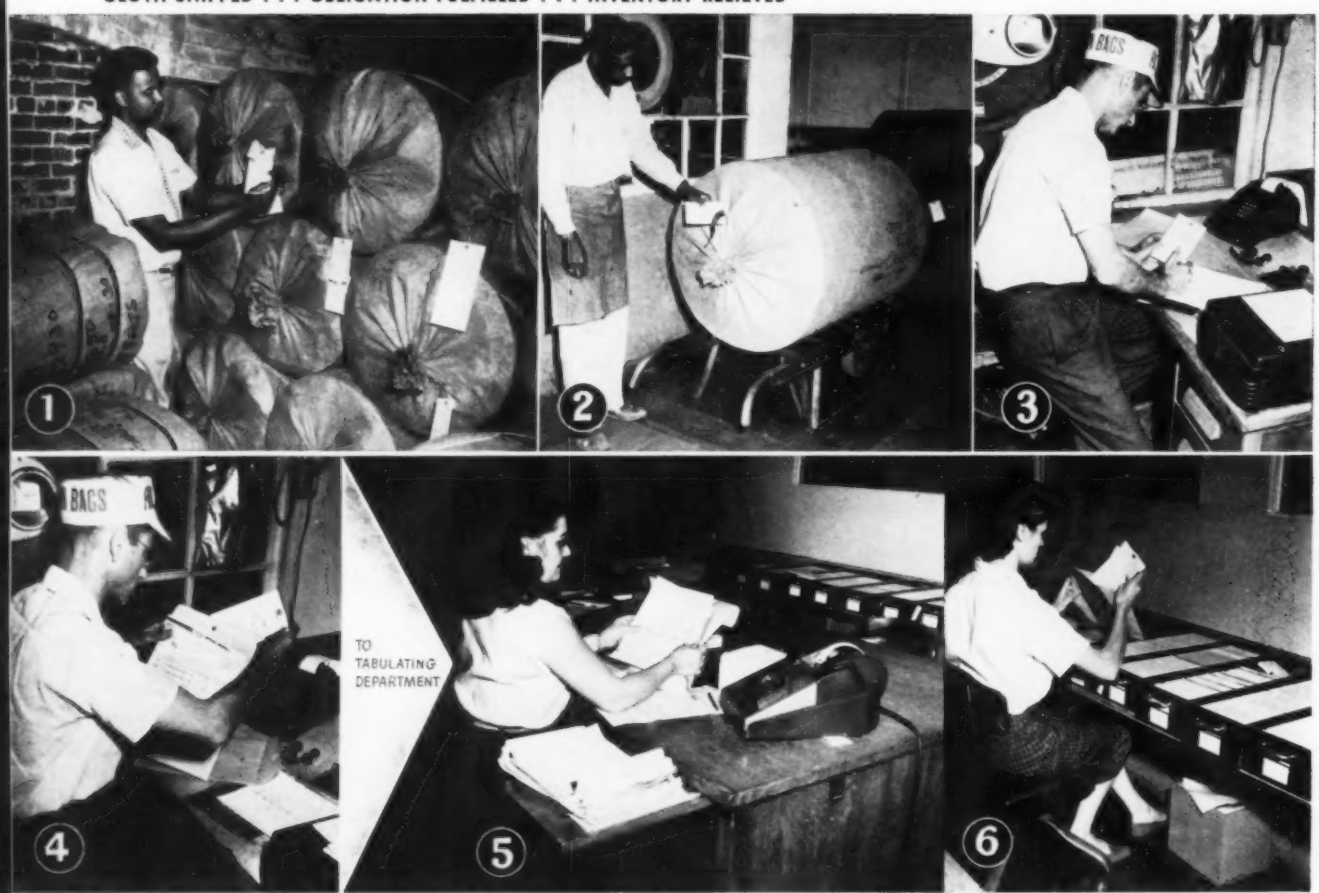


AN ORDER FOR CLOTH RECEIVED . . . AN OBLIGATION CREATED



An Obligation Card is prepared by the key punch machine operator (left photo) from the typewritten order and after accuracy of information punched into the card has been verified it is filed in the obligation or order card file (right photo).

CLOTH SHIPPED . . . OBLIGATION FULFILLED . . . INVENTORY RELIEVED



From warehouse (1) cloth ordered goes to shipping department where tags are removed (2) and given to foreman (3) who records data and inserts tags in envelope attached to shipping order (4). Shipment completed, ship order and tags go to tab department (5) where order is used as basis for taking Obligation Card from order file and tags for taking Production Cards from inventory file (6).

punched from identification tags as explained previously.

Usage is obtained by having each department accumulate tags removed from rolls as they are used. Shipping lists are prepared by receiving from the Shipping Department their copy of order attached to tags removed from goods when shipped.

Tabulating Department then

(Continued on page 209)

Fiber fineness—how many tests?

by F. G. Ernest
Exclusive

This study shows that Micronaire testing of two samples per bale exceeds the requirements of the formula recommended by ASTM. One test per bale can be considered adequate, provided a variation of plus or minus 0.1 or less from the true mean in 75% of all bales is satisfactory, and provided that a variation of 0.2 to 0.4 in 25% of all bales is not considered excessive.

OF ALL the techniques for measurement of cotton fiber properties which have been developed within the last decade or two, tests to determine fiber fineness have become perhaps the most popular in terms of actual frequency of usage on the mill operating level.

There are a number of reasons for this widespread acceptance of these tests, not the least of which is their relative economy. The speed and ease with which they can be performed have made it feasible for one or two technicians to process in a single day samples taken from hundreds of bales. Indeed, it has become almost as commonplace for mills to subject their entire raw stock consumption to fiber fineness tests as it has been to class each bale for staple length and grade.

There are of course other reasons for the universal usage of this practice. Relatively low cost does not in itself constitute sufficient reason for performing a test. Research has demonstrated the importance of blending according to fiber fineness. This becomes particularly apparent when one realizes that the average number of fibers per cross section of a given yarn count will vary in direct proportion to the fineness of the fibers, resulting in changes in yarn diameters, which in turn cause changes in contraction, in strength, and in other physical characteristics of yarns and fabrics.

Fiber properties also have a considerable effect on bleaching and dyeing, which make a consideration of this factor important in spinning and weaving.

Furthermore, fiber fineness tests have become an important tool in controlling various aspects of production, and in many cases the effectiveness of blending procedures is checked by sampling stock in process, in the opening line, at the pickers, or even as far along in the mill as finisher drawing.

The low cost of this testing procedure is primarily due to the fact that only a single sample (or in some cases two samples) is taken from each bale. It is generally assumed that the test results thus obtained are characteristic of the entire bales' content. This is in some ways a unique assumption. In most cases involving the gathering of data, the selection of such a small sample would be considered inadequate, and it would be difficult to defend any conclusion which might be based upon its test results.

Sample Size. One of the basic elements of sound statistical procedure is the selection of a representative and sufficiently large sample from which the nature of the total "population" can be inferred. In order to decide the number of tests which are necessary for the purpose of adequately determining the average quality characteristics of a given lot of material, statisticians have evolved the following formula, which has been recommended by Committee D-13 on textile materials of the American Society for Testing Materials*:

$$n = \frac{t^2 \times v^2}{E^2}$$

in which

n = number of tests
t = probability factor
v = coefficient of variation
E = allowable sampling error, expressed as a percentage

In order to determine how well the one or two sample per bale practice, which is followed by most mills satisfies the requirements of this formula, a study in comparative sample sizes was made.

There are a number of methods for determining fiber fineness, involving different instruments and units of measure. In this particular study the Micronaire was used.

In addition to checking the validity of present mill practice, this project sought to find out by an empirical procedure just how effective such present practice might be, in case the requirements of the above formula proved too stringent or too expensive.

The study involved a total of 600 individual tests which were performed on samples selected from 12 different bales of cotton.

A thorough evaluation of a sampling procedure would theoretically involve the complete testing of an entire "universe," i.e., in this case the entire contents of a number of bales of cotton. For obvious reasons this had to be ruled out as impractical. As a matter of expediency it was assumed

*American Society for Testing Materials, Committee D-13, "ASTM Standards on Textile Materials (With Related Information)," Appendix IV, Philadelphia, Pa., 1956, pp. 685-691.

that 50 samples per bale would approximate the entire "universe" of the bale.

The choice of 50 samples was more than adequate, for the "average" or arithmetic mean of all test results of the stock taken from any given bale did not change after the first 19 samples. In fact, the average test results of the stock coming from nine of the twelve bales which were involved in this study did not change after the first ten tests. We are referring here to two digit averages.

Beyond the first place to the right of the decimal, changes in the average continued to take place after the first 19 tests. However, inasmuch as Micronaire test results are always expressed only in two digits, such changes in the range of a hundredth or thousandth are insignificant for the purpose of our inquiry.

The following procedure was used: Fifty samples were selected at random from each of twelve different bales of strict middling full 1" to 1 1/32" cotton. Each sample was tested for fiber fineness on the Micronaire.

The fifty test results from each bale were arranged in a frequency distribution. From this data the standard deviation and the coefficient of variation were computed separately for each bale. *Table 1* shows these characteristics, comparing the actual range with the theoretical four and six sigma limits areas.

The four sigma limits area covers the arithmetic mean plus and minus two standard deviations. This theoretically includes 95.45% of all possible test results. The six sigma limits area which includes 99.73% of all possible cases extends to three standard deviations on either side of the mean.

An analysis of the data in *Table 1* shows that in each case the actual ranges of the 50 test results from each bale fall within the area of plus and minus three standard deviations, and in the case of bales G and J even within the four sigma limits area.

Calculating the Sample Size. We are now in a position to apply the formula for the determination of the required number of tests. From *Table 1* we see that the average coefficient of variation is 2.79.

TABLE 1. Standard Deviation and Coefficient of Variation of Test Bales

Bale Identification	Mean of 50 Test Results	Std Deviation	C.V.	±2 Std Deviations 95.45% of Total "Population"	±3 Std Deviations 99.73% of Total "Population"	Actual Range of 50 Test Results
A	4.58	.14	3.06	4.30 - 4.86	4.16 - 5.00	4.30 - 5.00
B	4.66	.11	2.40	4.44 - 4.88	4.33 - 4.99	4.30 - 4.90
C	4.30	.17	4.06	3.96 - 4.64	3.79 - 4.81	3.90 - 4.50
D	4.43	.12	2.71	4.19 - 4.67	4.07 - 4.79	4.20 - 4.80
E	4.39	.10	2.17	4.19 - 4.59	4.09 - 4.69	4.20 - 4.60
F	4.75	.11	2.38	4.53 - 4.97	4.42 - 5.08	4.50 - 5.00
G	4.33	.17	3.95	3.99 - 4.67	3.82 - 4.84	4.00 - 4.60
H	4.41	.13	2.97	4.15 - 4.67	4.02 - 4.80	4.10 - 4.60
I	4.48	.10	2.17	4.28 - 4.68	4.18 - 4.78	4.20 - 4.70
J	4.07	.09	2.21	3.89 - 4.25	3.80 - 4.34	3.90 - 4.20
K	4.60	.11	2.38	4.38 - 4.82	4.27 - 4.93	4.30 - 4.90
L	4.23	.13	2.98	3.97 - 4.49	3.84 - 4.62	4.00 - 4.50
Avg.	.....	.12	2.79	.....	.....	.....

TABLE 2. Mean of Micronaire Test Results of 50 Samples*

Bale Identification	Mean of 50 Test Results	First Test Result	Average Test Result of Subsequent Consecutive Samples								
			First 2	First 3	First 4	First 5	First 6	First 7	First 8	First 9	First 10
A	4.58	4.50	4.55	4.47	4.45	4.44	4.47	4.47	4.51	4.52	4.55
B	4.66	4.70	4.70	4.70	4.68	4.68	4.68	4.69	4.70	4.69	4.67
C	4.30	3.90	4.10	4.17	4.25	4.30	4.25	4.26	4.29	4.27	4.29
D	4.43	4.50	4.40	4.40	4.45	4.44	4.43	4.43	4.41	4.41	4.43
E	4.39	4.40	4.35	4.37	4.38	4.38	4.40	4.40	4.38	4.37	4.37
F	4.75	4.70	4.70	4.73	4.70	4.74	4.73	4.74	4.78	4.76	4.76
G	4.33	4.60	4.50	4.40	4.30	4.36	4.40	4.40	4.36	4.34	4.34
H	4.41	4.20	4.25	4.27	4.30	4.26	4.28	4.27	4.28	4.29	4.31
I	4.48	4.00	4.50	4.47	4.50	4.48	4.47	4.47	4.49	4.47	4.46
J	4.07	4.10	4.10	4.07	4.08	4.06	4.05	4.06	4.06	4.07	4.07
K	4.60	4.60	4.55	4.57	4.58	4.58	4.55	4.54	4.55	4.56	4.54
L	4.23	4.30	4.40	4.40	4.35	4.32	4.32	4.30	4.29	4.27	4.28

*From one bale, as compared to test results of the first sample from the same bale, and compared with the mean of subsequent groups of consecutive samples up to the first ten samples.

It is generally recommended by ASTM and other groups concerned with testing that a probability of 95 per cent is satisfactory for most testing purposes. This means that values will fall within specified reliability limits in 95 cases out of 100. This should be sufficient in the case of Micronaire testing.

The probability factor for 95% is 1.96. Allowing 5% as a reasonably random sampling error, our formula becomes

$$n = \frac{(1.96)^2 \times (2.79)^2}{(5)^2} = 1.195$$

This means that if we consider a 95% probability level and a 5% allowable error as standard, 1.2 samples per bale should be tested. The mills which are selecting as many as 2 samples per bale are using a sample size which is in excess of this requirement, whereas the use of only one sample falls slightly short.

In order to determine the effect of this apparent deficiency of .2 samples per bale, additional computations of the available data were made.

A further analysis of the 600 test results from our 12 bales will disclose just how close the average test results from a given sample size will approximate the actual average fiber fineness of the total bale and how many additional samplings are required before the average result will no longer change materially.

Table 2 shows the total mean of the 50 test results of each bale, and compares them to the first test result, the mean of the first two test

TABLE 3. Differences Between the Mean of 50 Micronaire Test Results*

Bale Identification	Differences Between the Average of 50 Test Results and: First Test Results	First Two Results	First Three Results	First Four Results	First Five Results	First Six Results	First Seven Results	First Eight Results	First Nine Results	First Ten Results
A	—.08	—.03	—.11	—.13	—.14	—.11	—.11	—.07	—.06	—.03
B	+.04	+.04	+.04	+.02	+.02	+.02	+.03	+.04	+.03	+.01
C	—.40	—.20	—.13	—.05	.00	—.05	—.04	—.01	—.03	—.01
D	+.07	—.03	—.03	+.02	+.01	.00	.00	—.02	—.02	.00
E	+.01	—.04	—.02	—.01	—.01	+.01	+.01	—.01	—.02	—.02
F	—.05	—.05	—.02	+.05	—.01	—.02	—.01	+.03	+.01	+.01
G	+.27	+.17	+.07	—.03	+.03	+.07	+.07	+.03	+.01	+.01
H	—.21	—.16	—.14	—.11	—.15	—.13	—.14	—.13	—.12	—.10
I	+.12	+.02	—.01	+.02	.00	—.01	—.01	+.01	— 01	—.02
J	+.03	+.03	.00	+.01	—.01	—.02	—.01	—.01	.00	.00
K	.00	—.05	—.03	—.02	—.02	—.05	—.06	—.05	—.04	—.06
L	+.07	+.17	+.17	+.12	+.09	+.09	+.07	+.06	+.04	+.05
Average**	.11	.09	.06	.05	.04	.05	.05	.04	.03	.03

*From one bale and the first test result from the same bale and the averages of subsequent groups of consecutive samples.

**In computing the average difference of the mean test result of each group of samples from the mean of the 50 test results, plus and minus signs were ignored, and only the magnitude of each difference was considered.

TABLE 4. Number of Samples Required Before Average Test Result Coincides with Mean of 50 Samples

Number of Samples*	Bale Identification	Total No. of Bales	Per Cent of Total Bales	Cumulative Per Cent
1	B, E, F, J, K	5	41.7	41.7
2	A, D, I	3	25.0	66.7
4	G	1	8.3	75.0
5	C	1	8.4	83.4
16	L	1	8.3	91.7
19	H	1	8.3	100.0
Total		12	100.0	

*In which average test result coincides with mean of 50 samples.

TABLE 5. Correlation Between Standard Deviation and Sample Size Beyond Which Mean Test Result Will Not Change Significantly

Standard Deviation	Optimum Sample Size 1	2	4	5	16	19
.09	J					
.10	E	I				
.11	B,F,K					
.12		D				
.13						
.14		A			L	H
.17			G	C		

results, the mean of the first three test results, and the means of all the intervening groups of samples up to and including the mean of the first ten test results.

Table 3 contains the differences between the means of the 50 test results from each bale and the mean test results of the smaller groups of samples which are shown in *Table 2*. An analysis of *Table 3* shows that in the case of 66.7% of the bales the average of the first two test results is equal to the average of the 50 samples from the same bale.

In the case of 41.7% of the bales, the very first sample would have been sufficient. Inasmuch as we are concerned only with a final two digit figure, no significant difference exists, if the value in table 4 is .05 or less. *Table 4* summarizes the number of samples required before the average test result coincides with the mean of the 50 samples.

It is noteworthy that in the case of three of the bales in which the mean of the test results of a small sample coincided with the mean of the 50-sample test results, an increase in the sample size resulted in different average values. Thus bale K, which is one of the bales where the very first result coincides with the mean of the 50 samples, will have to be given a value of .1 higher if the sample size is increased to 7 or to 10.

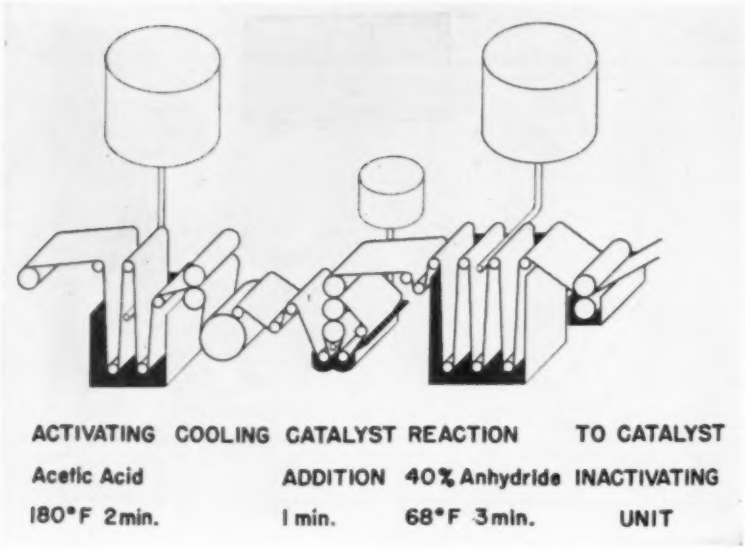
Similarly, bale A, in which the mean of the first two results coincides with the mean of the 50 samples, changes its value after the testing of additional samples, and in the case of bale G the average result will change when the sample size is increased beyond five. In each of these three bales the net change will only be .1.

It is interesting to note that there is a certain amount of correlation between a low standard deviation and a small sample size after which the mean test result no longer changes significantly. With the exception of bale A, all bales where the first or the first two test results were sufficient have a standard deviation of .12 or less. This is illustrated in *Table 5*.

At the bottom of *Table 3* the average difference in test results of a given size sample of all the bales has been computed, disre-

(Continued on page 104)

Figure I. Continuous acetylation range.



HOW MUCH

Preliminary study of the

by H. K. Gardner, Jr.[1]
Southern Regional Research Laboratory[2]

Exclusive

PROCESSES for the partial acetylation of cotton yarn and fabric were developed at the Southern Utilization Research and Development Division as a part of a research program to expand cotton utilization in products having specific properties. This chemically modified cotton product has outstanding resistance to deterioration by microorganisms and heat, and has been found to have unusually long service life in various applications such as sand bags, commercial laundry press cloths, household ironing board covers, and water softener bags (1, 2, 3, 4, 8).[3]

The possible uses of PA cotton are many and varied and might include in addition to those mentioned above convertible tops, awnings and tarpaulins, fishing supplies, conveyor belts, filter bags, hot mill gloves, shoe fabrics, and industrial thread, to name a few.

It is estimated that about 800,000 bales of cotton and 110 million pounds of man-made fibers, mostly non-cellulosic (equivalent to about 220 million pounds of cotton), go into industrial end-uses in which one or more of the improved properties of PA cotton might be advantageous. Even though it cannot be expected that all of these materials will be replaced by PA cotton, nevertheless, considerable market potential is indicated.

In this paper three preliminary cost estimates for the production of PA cotton yarn and fabric are presented. The cost estimates are for processing "by contract" and exclude the cost of untreated cotton yarn or fabric. Each cost estimate includes calculated unit service charges for processing including profits, at levels representing investment payout periods of two

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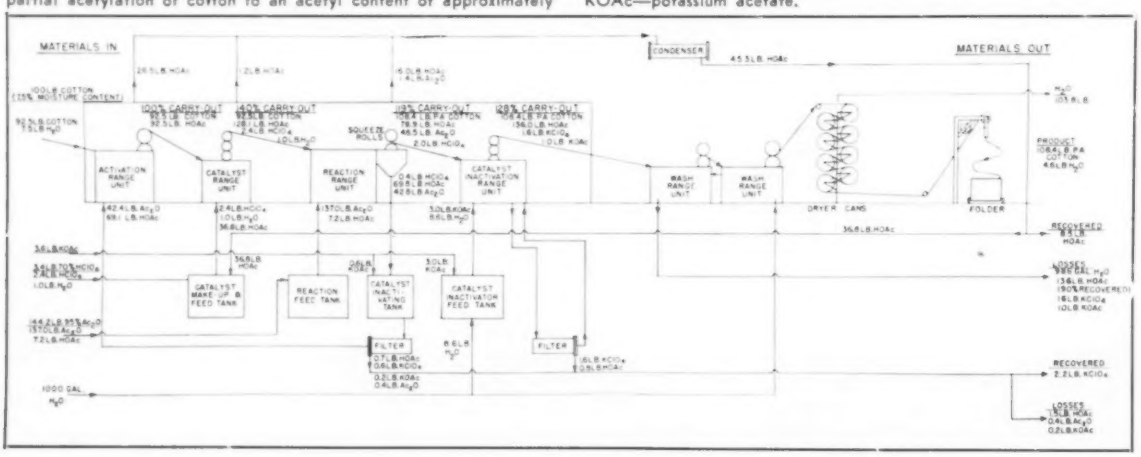
[2]One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture; it is located at New Orleans, La.

[3]Numbers in parentheses refer to literature references at the end of this article.

Figure II. Chemical balance and flow diagram for the continuous partial acetylation of cotton to an acetyl content of approximately 15 per cent. Legend: HOAc—acetic acid; Ac_2O—acetic anhydride; KOAc—potassium acetate.



WILL P. A. COTTON COST?

manufacturing and chemical costs of partially acetylating cotton

and five years.

One cost estimate is based on the construction and operation of a hypothetical large-scale continuous plant with a capacity for partially acetylating cotton yarn at a rate in excess of 50 million pounds annually. The additional cost estimates are predicated on hypothetical expansion of an existing textile finishing plant to include the production of PA cotton yarn and fabric at selected production capacities as low as approximately two and one-half million yards of two-yard sheeting or equivalent annually.

The Process. The essential steps of the SURDD process for continuous partial acetylation of cotton, schematically diagrammed in *Figure I,* are three: pretreating or activating the cotton yarn or fabric with acetic acid - acetic anhydride solution, impregnating it with perchloric acid catalyst, and then reacting the cotton with acetic anhydride. These are followed by catalyst inactivation with potassium acetate and subsequent washing and drying. A chemical balance and complete flow diagram for the continuous partial acetylation process is shown in *Figure II.*

The schematic plant layout in *Figure III* is for the smaller yarn plant. This layout is also applicable to the fabric plant except that a tenter frame is used instead of dryer cans for drying the fabric. For the larger yarn plant the layout was planned at two elevations to accommodate larger equipment units, and three additional continuous ranges of the size shown in *Figure III.*

Auxiliary systems were selected to meet the requirements of the four ranges. An evaporator is included in the auxiliary systems to remove from the chemicals certain impurities such as dirt and wax which accumulate after repeated reuse. Also in the acetylation of dyed materials, such as awnings, some dye is dissolved in the chemicals and must be removed prior to the reuse of such chemicals with non-dyed or other dyed materials.

Plant Investment. Estimated total plant investment costs for the various capacity continuous partial acetylation plants for processing yarn and fabric are shown in *Table I.* The percentages used in estimating the total plant costs were selected from published information (5, 6, 7).

Buildings are of steel, concrete, and brick, with service facilities such as heating, ventilation, sanitary plumbing, lighting, and sprinklers. In all cases, buildings are provided for processing and storage, and in the case of the large plant, also for administrative offices and laboratories, with land and yard improvements.

Working Capital. Working capital was determined for the normal conduct of business for processing yarn or fabric by contract, considering chemical stocks, product inventory, extended credit, in-process inventory, and available

TABLE I. PA Cotton: Estimated Plant Investment Costs

YARN

Plant Capacity Million Pounds	Annual Operation, Days	Daily Operation, Hours	Installed Equipment Cost $	Total Plant Cost[1] $
Untreated				
54.432[2]	350	24	1,116,772	3,020,510
3.780[3]	250	16[4]	258,442	596,647
6.480[3]	250	24	275,703	624,144
9.072[3]	350	24	289,825	646,642

FABRIC

Plant Capacity Million Yards	Annual Operation, Days	Daily Operation, Hours	Installed Equipment Cost $	Plant Total Cost[1] $
Single Thickness				
2.520[3]	250	16[4]	268,387	598,467
4.320[3]	250	24	268,387	598,467
6.048[3]	350	24	286,427	627,206
Double Thickness[5]				
5.040[3]	250	16[4]	310,520	714,154
8.640[3]	250	24	310,520	714,154
12.096[3]	350	24	336,971	756,289

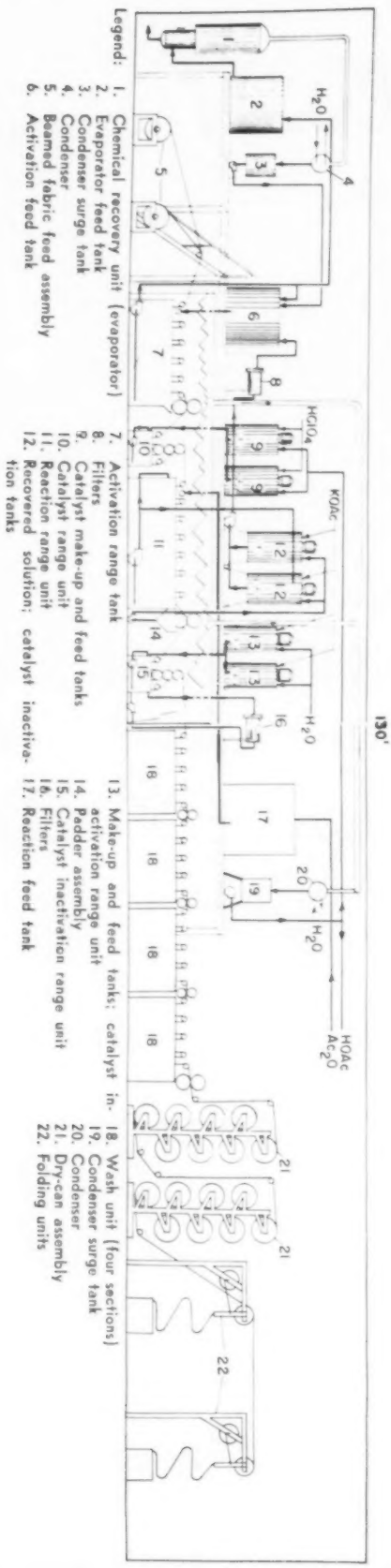
[1] Total plant cost is installed equipment cost plus process piping, instrumentation, outside lines, auxiliary facilities, buildings, land and improvements, engineering and construction, and contingencies.

[2] A self-sustaining plant equipped with four continuous partial acetylation ranges and other necessary equipment for processing in excess of 50 million pounds of yarn annually.

[3] Plant is addition to existing textile finishing mill and includes one continuous partial acetylation range and other necessary equipment for processing between about 3.8 and 9.1 million pounds of yarn and between 2.5 million and 12.1 million yards of 60-inch-wide, 2 yd sheeting or equivalent, annually.

[4] Net production time is 14 hours per day allowing 2 hours for starting up and shutting down.

[5] Two thicknesses of material processed simultaneously.



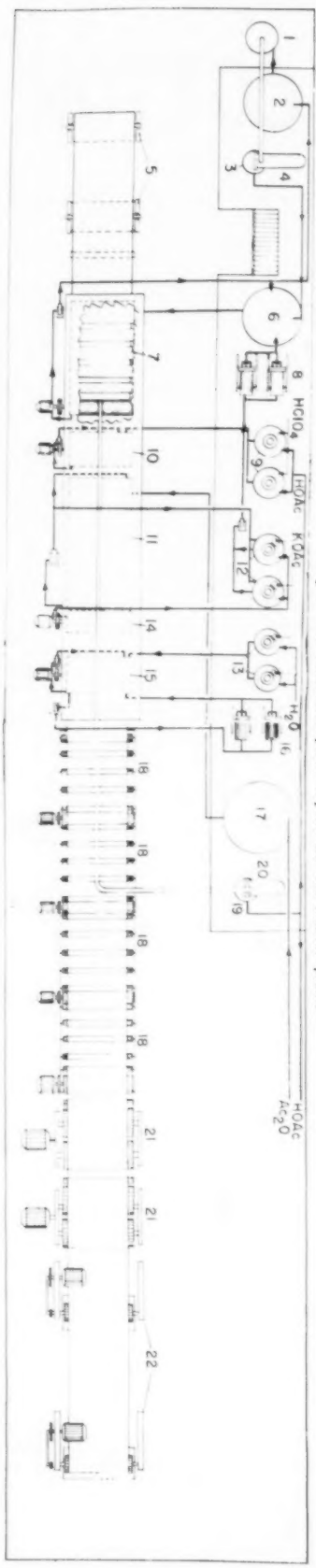


Figure III. Schematic plant layout for the smaller plant.

funds needed for wages and other expenses during a four-week period.

Manufacturing Cost. In this report the total manufacturing cost is considered to be the sum of the various processing costs plus general expenses.

The estimated manufacturing cost for partially acetylating cotton yarn to 15 per cent acetyl content in a continuous process, processing about 54 million pounds of scoured yarn annually with reasonable chemical recovery, is 14.2 cents per pound of product. A 15 per cent acetyl content will increase the heat resistant characteristics of the cotton. For processing 3.8 and 9.1 million pounds of scoured yarn annually, the estimated manufacturing costs are 16.8 cents and 15.1 cents per pound of product, respectively.

The manufacturing costs for partially acetylating single-thickness, 60-inch wide, 2-yard cotton fabric under similar conditions of processing are estimated to be 14.3 cents and 11.5 cents per linear yard for annual productions of about 2.5 and 6.0 million yards, respectively. Costs for processing two thicknesses of the above fabric simultaneously are 11.4 cents and 9.6 cents per linear yard for annual productions of 5.0 and 12.1 million yards.

Direct processing costs were found to represent a major portion of the total manufacturing costs. Chemical requirements shown on the Chemical Balance and Flow Diagram, *Figure II*, were determined from adjusted data obtained from laboratory, pilot-plant, and commercial scale operation, and are considered realistic in view of the present stage of the process development. The unit costs used for chemicals are shown in the box at the top of the opposite page.

Direct labor costs were based on supporting warehouse labor at $1.45 per hour plus the process labor requirements per continuous partial acetylation range as shown in the box at the top of the opposite page.

Utility costs include those for steam, electrical power, and process water. Steam costs were computed for a requirement of four

UNIT COSTS USED FOR CHEMICALS

Chemical	Weight Ratio Chemical/Cotton	Unit Price c/lb
Acetic anhydride 95%	1.442/1.0	14
Perchloric acid 70%	0.034/1.0	66
Potassium acetate	0.036/1.0	28
Acetic acid, glacial	1.309/1.0	10
Potassium perchlorate	0.022/1.0	17½

PROCESS LABOR REQUIREMENTS

Plant Size	Labor	Base Wage Rate per Hour*
Large scale (2 or more ranges)	½ skilled operator	$2.15
	2 semi-skilled operators	1.45
Smaller scale (1 range)	1 skilled operator	2.15
	2 semi-skilled operators	1.45

*Labor cost includes night differential pay from 6:00 p.m. to 6:00 a.m. and was considered as the base wage plus 10 per cent.

pounds of steam per pound of cotton, using unit steam costs of 50 cents and 70 cents per 1000 pounds for the large and small plants, respectively.

Electrical power costs were estimated using a unit cost of 1½ cents per kwh; requirements of about 280 kilowatts for the larger scale operation, and 55 kilowatts for the smaller scale operation. Process water costs were based on a requirement of 10 gallons of water per pound of cotton processed at a cost of 10 cents per 1000 gallons.

General expenses are those for general administrative overhead, sales and distribution, and financing.

Chemical Recovery. As much as 47.5 per cent of the total manufacturing cost represents chemicals lost in washing. *Table II* shows manufacturing costs as they are without chemical recovery, and as they appear with 90 per cent recovery of acetic acid from the wash water.

Some of the recovery systems which might be used in the process are:

(1) Continuous countercurrent liquid-liquid extraction of acetic acid in the overflow from the first washer, using an extraction medium such as 70 per cent ethyl acetate/30 per cent benzene, or 70 per cent tributyl phosphate/30 per cent benzene, followed by fractionation. We have no information on the cost of this recovery, but estimates from industrial sources run as low as one cent per pound of acetic acid recovered. This recovery cost of one cent per pound of acetic acid was allowed in calculating the manufacturing costs based on 90 per cent recovery of acetic acid in *Table II.*

(2) Regeneration of acetic anhydride for reuse, by thermal decomposition (cracking) of acetic acid using phosphoric acid or a phosphate as catalyst. By this method acetic anhydride would be obtained directly. Costs from industrial sources for this recovery run as low as 3 to 4 cents per pound of anhydride recovered.

(3) Recovery of 90 per cent of the acetic acid remaining on the partially acetylated cotton after catalyst inactivation prior to washing. In laboratory tests conducted this method had no apparent detrimental effect on the product, but since it has not been tried on a pilot plant scale it is only a possibility.

Estimated Service Charge and Payout Time. Unit service charges and corresponding break even points were calculated for partially acetylating cotton in each plant at profit levels representing payout times of 2 and 5 years and with reasonable chemical recovery. Payout time denotes the number of years in which the fixed capital investment is recovered from de-

TABLE II. PA Cotton: Yarn and Fabric Manufacturing Costs

YARN

Annual Processing Rate	Estimated cost with Reasonable Chemical Recovery		Estimated Cost without Chemical Recovery	
Million Pounds Untreated	Cents/Pound Untreated Cotton	Cents/Pound PA Product	Cents/Pound Untreated Cotton	Cents/Pound PA Product
54.432	16.0	14.2	29.8	26.4
3.780	19.0	16.8	32.8	29.0
6.480	17.7	15.7	31.5	27.9
9.072	17.1	15.1	31.0	27.4

FABRIC

Annual Processing Rate Million Yards	Estimated cost with Reasonable Chemical Recovery Cents/Yard	Estimated Cost without Chemical Recovery Cents/Yard
Single Thickness		
2.520	14.3	21.3
4.320	12.2	19.2
6.048	11.5	18.5
Double Thickness		
5.040	11.4	18.2
8.640	10.2	17.1
12.096	9.6	16.6

TABLE III. PA Cotton: Estimated Service Charges and Break-Even Points for Two Profit Levels

YARN

Annual Processing Rate	Estimated Service Charge Cents per Pound PA Product		Break-Even Point Days Operation	
Million Pounds Untreated	Higher Profit	Lower Profit	Higher Profit	Lower Profit
54.432	18.7	15.6	81	168
3.780	29.2	20.6	62	144
6.480	23.3	18.0	73	161
9.072	20.7	16.8	82	175

FABRIC

Annual Processing Rate	Estimated Service Charge Cents per Pound PA Product		Break-Even Point Days Operation	
Million Yards	Higher Profit	Lower Profit	Higher Profit	Lower Profit
Single Thickness				
2.520	35.3	20.8	53	129
4.320	24.4	16.0	61	142
6.048	20.4	14.2	68	155
Double Thickness				
5.040	24.0	15.3	54	130
8.640	17.5	12.5	63	145
12.096	15.2	11.3	69	155

preciation accruals and profits after taxes. Estimated gross income, from which each service charge was computed, was obtained by the summation of selected net profit, taxes, and manufacturing cost.

The estimated unit service charges for the plant processing 54 million pounds annually are 18.7 cents per pound of product for amortizing the investment over two years, and 15.6 cents per pound of product for amortizing the investment over 5 years. For the smaller plants, annually processing between 3.8 and 9.1 million pounds of yarn, calculated unit service charges for two years amortization are 29.2 cents and 20.7 cents per pound of product; and for five years amortization 20.6 cents and 16.8 cents per pound of product.

For the plants processing between 2.5 and 6.0 million yards of single-thickness, 60-inch wide, 2-yard cotton fabric, the service charges range between 35.3 cents and 20.4 cents per linear yard and 20.8 cents and 14.2 cents per linear yard, respectively, for two- and five-year amortization of the fixed investments. When simultaneously processing two thicknesses of fabric, the estimated unit service charges range between 24.0 cents and 15.2 cents per linear yard for two-year amortization, and 15.3 cents and 11.3 cents per linear yard for five-year amortization.

It must be emphasized that the figures reported in these preliminary cost estimates are firm only to the extent of the validity of the many assumptions set forth and should not be compared with results of other estimates or processes without due consideration.

It should be further emphasized that the processing costs estimated in this report are based on specified continuous production rates and should these rates be reduced or should intermittent operations occur, then the processing costs will increase accordingly.

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NOTE: A considerably more detailed study, titled "PA Cotton: Preliminary Cost Studies, ARS-72-13," is available on request from Southern Utilization Research and Development Division, U. S. Department of Agriculture, P. O. Box 7307, New Orleans 19, La.

Fiber fineness

(from page 99)

garding all plus and minus signs. This shows that after the third sample the average difference of the test results of each succeeding group from the mean test result of the 50 samples is .05 or less.

While the average of the first column in this table is only .11, indicating that the average difference between the first test result and the mean of the 50 test results is only plus or minus .1, an examination of this column shows that the first result in three bales (C, G, and H) varied from the mean of the 50 samples by a greater amount.

Conclusions:

1. The selection and testing of two samples per bale exceeds the requirement of the recommended formula.

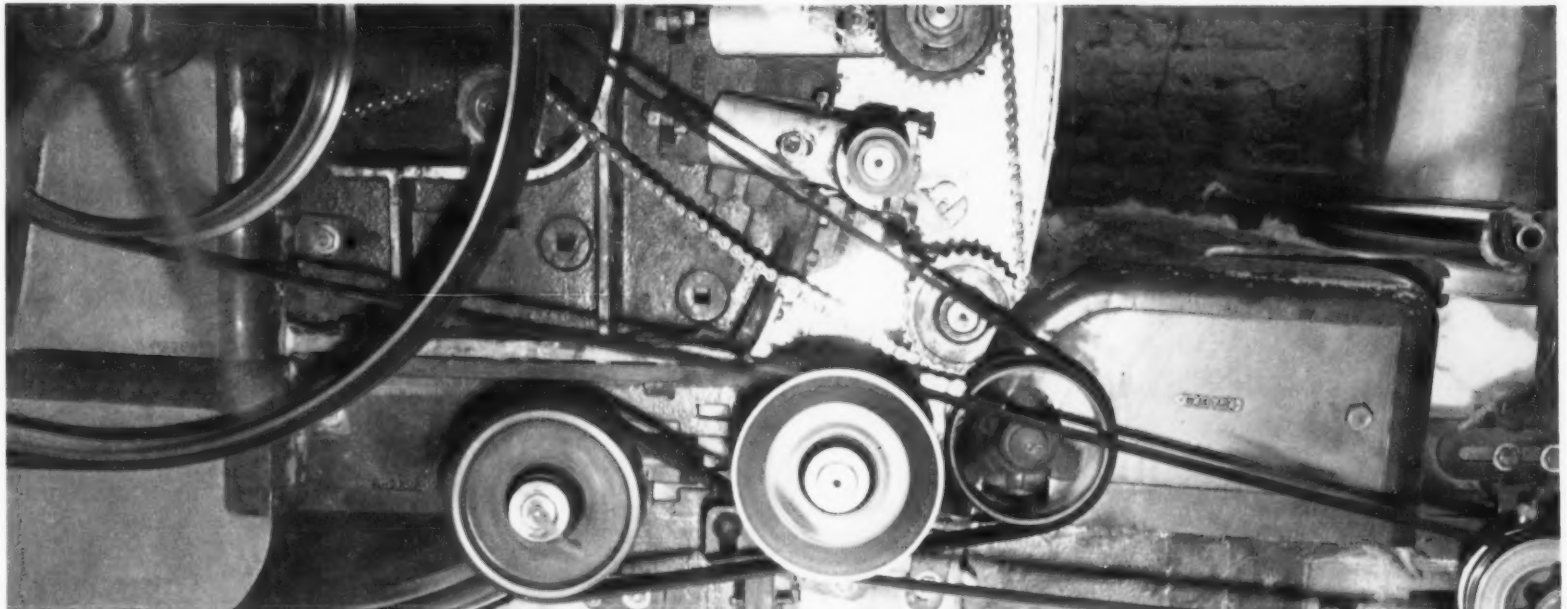
2. The practice of testing only one sample per bale can be considered adequate, provided a variation of plus or minus .1 or less from the true mean in 75% of all bales is satisfactory, and provided a variation of .2 to .4 in 25% of all bales is not excessive.

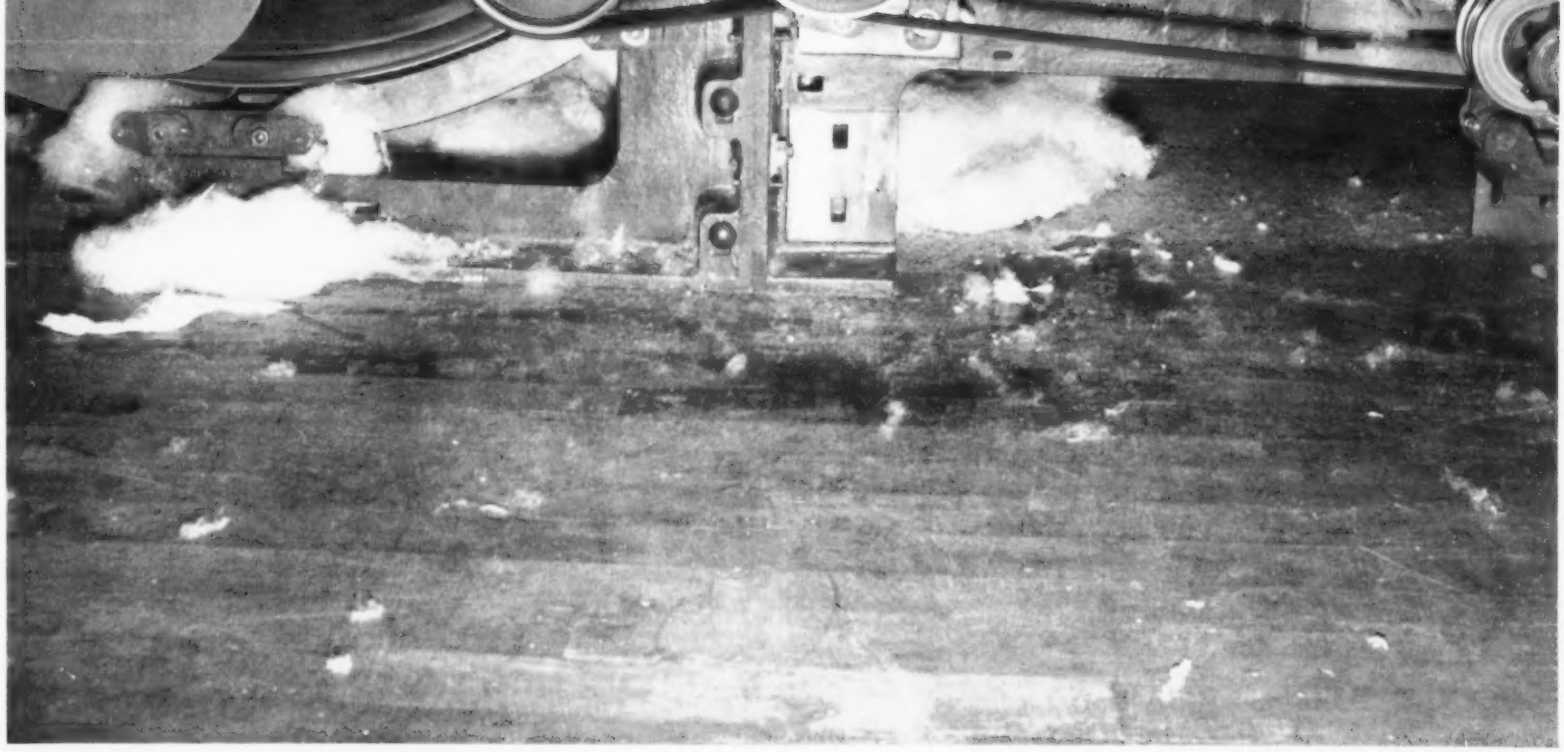
It must be borne in mind that these conclusions are based only upon the results from a limited study involving a small number of bales, and therefore no claim of universal application of these findings can be made. A much more comprehensive experiment is required before any generalized rule can be recommended.

Tear along this line to post in wool mill carding department

RAKE OUT WOOL WASTE

before it reaches cylinder and causes bad work





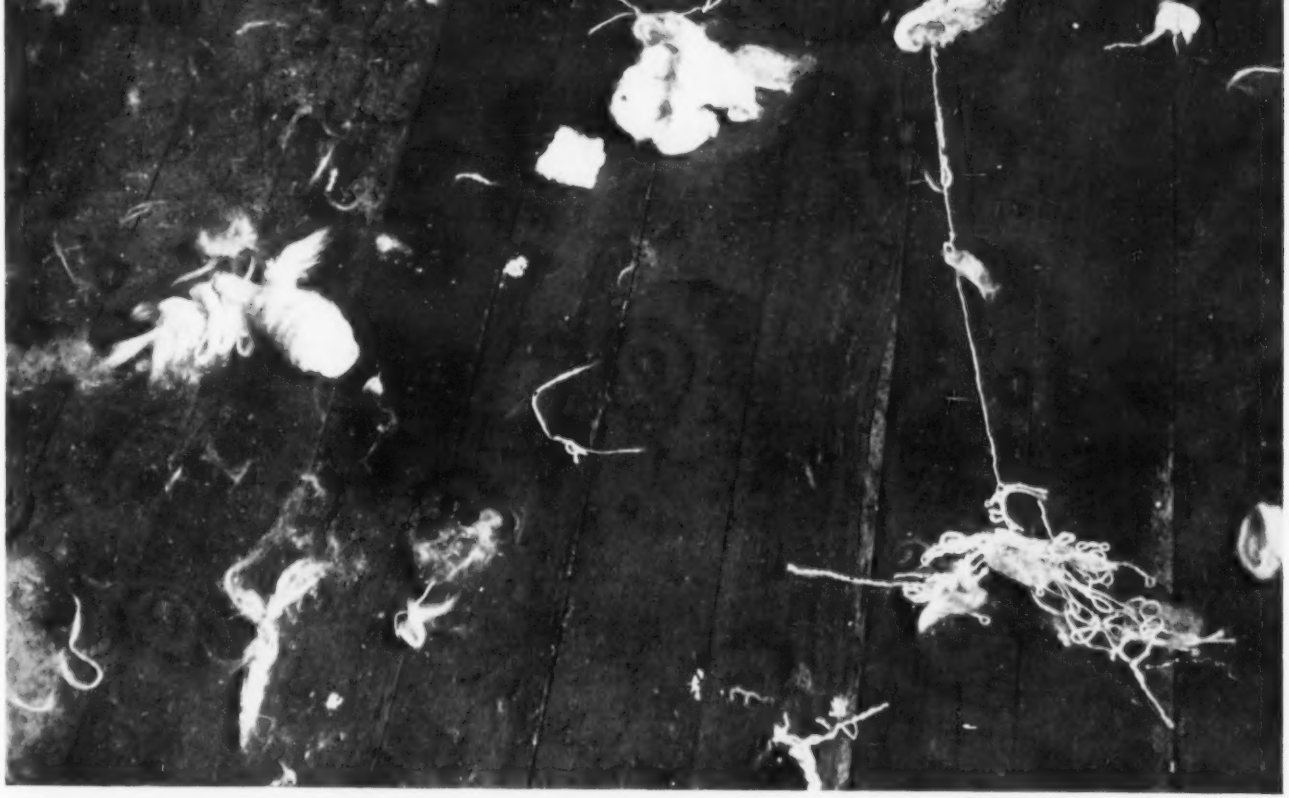
Textile Industries
27

Textile Industries POSTER SERVICE

This is one of a series of manufacturing hints and employee reminders in poster form, designed for placing on mill bulletin boards. Reprints are available. Write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

MESSY AND COSTLY!

Keep spinning waste segregated and off the floor



Textile Industries

28

Textile Industries POSTER SERVICE

This is one of a series of manufacturing hints and employee reminders in poster form, designed for placing on mill bulletin boards. Reprints are available. Write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Tear along this line to post in spinning room

Give them their own quality control meetings, and

secondhands will find the trouble spots

This report of a conference on weaving defects shows how helpful these men can be

by Maley Chagro
Exclusive

MANY mills accomplish most of their quality planning (and most of all other planning) on the first shift. Then each shift briefs the succeeding shifts, with current quality problems always in the forefront. Naturally, any and all quality drives should include all shifts.

Apart from these drives, and regular or daily quality inspections, a planned program for the discussion of known classified defects brings to light additional causes and sources. When recorded, these sources become a valuable reference file of information which will greatly assist all supervisors confronted with current quality problems—and will also materially aid supervisors in preventing many of these problems.

In one large northern mill it is the regular procedure for the superintendent to discuss quality problems with all overseers at the regular daily conference. Whatever action was decided upon at these conferences was passed on to the secondhands of all shifts.

To implement the mill's constant drive to maintain the highest quality possible, the second shift (under the direction of the night supervisor-in-charge) held a weekly discussion on known defects in the same conference room. But only quality defects were discussed.

Everything was recorded, and many of the causes given were accredited by the supervisors (all secondhands) to employees whose quality suggestions often indicated the course to follow in reducing defects or eliminating bad methods causing defects.

The following "questions" and "answers" were taken at random from a series of second shift conferences on weaving faults. They indicate the many causes of just one classified defect. The questions were submitted by the night supervisor-in-charge, who would notify in advance the supervisor selected to discuss the defects.

The answers given did not necessarily solve the defect problem under discussion; the discussion was merely a forum to help add to existing knowledge, and to serve as a "brush-up."

Two of the objectives were to uncover bad methods, if any, and to discuss and record causes of defects that have similarity to other causes but were not too generally known. Other causes that were definitely well known also were recorded.

The conferences lasted one hour, and usually two or three defects would be discussed within the time limit. All supervisors received copies of the minutes.

The recorded questions would appear as only the classified defect (such as "uneven weave") under discussion as follows:

Question: What are a few of the causes of uneven weave that do not generally appear in any seconds report?

Answers: Friction bands on the

loom beam heads. If the graphite is not properly applied, just poured on, the graphite will form lumps. This will soon cause the beam to "jump and hold back," causing light and heavy cross-sections of cloth.

When the beam "jumps" the ends loosen, causing the "heavy" weave, and when "holding back" the ends are stretched, causing the "light" weave. Graphite must be well rubbed in on the beam head and cardboard, the cardboard acting as the friction and held rigid to the head by the chain.

Another cause of uneven weave is when the weaver "pumps" down loose cloth and neglects to adjust the friction weights. If the loom is stopped, the friction adjusted and then pumped down, many uneven places would be avoided.

A wornout clutch will occasionally jump out and cause a heavy place in the cloth. Close clutch inspection is always necessary in the takeup gear chain.

Exercise care when sweeping under the looms. If the broom accidentally strikes and lifts the weights on the lever, uneven places will appear in the cloth.

A high spot on the arbors of beam heads will also cause enough eccentricity to make light and heavy cross-sections in the cloth.

No direct recommendations were made at the conferences as to reinstruction in proper methods. Unless an emergency existed, any subsequent action resulting from the reports was instituted by the superintendent, and if necessary the overseers.

Question: Are all headskips and cam loom skips classified as wrong weave?

Answers: "At present all loom cam skips are listed as wrong weave. Among the chief causes of such skips are jacks with loose or worn pins. A low spot on a faulty pin will not raise the harness high enough; and a high spot on a faulty pin will cause the harness to go too low."

"Anything that interferes with a completely open shed will almost invariably cause such skips as, for example, the shuttle going between ends instead of a completely open shed.

"Even with new jacks, pins have occasionally been found to be loose." (Discussion as to the advisability of spot welding all replaced pins instead of splining them. Here again, no recommendations were made—the discussion simply appeared on the report. However, experiments were ordered.)

"Overshots from high temples with selvage ends lifted high. Weavers packing the temples if selvage is low or too far over to one side. Overshots from picker if hole in rubber is worn too deeply, or set too high or low. It is the weaver's responsibility to call the loomfixer when such skips occur."

"Headskips are so-called because they occur only on our dobby looms, yet with one exception there is almost the same appearance as cam loom skips. Not all headskips are classified as wrong weave."

"Headskips on one of our styles is classified with mispicks. This style pattern repeats every 15 picks, and there are 12 single-harness actions in each repeat pattern (all harnesses except one are down 12 times during each repeat). If the hooks on the dobby head fail to release for any reason during the single harness action, and all harnesses remain down, the pick, if a face pick, will lie on the face of the cloth. It is definitely a mispick because no pick has been woven."

"Other causes of headskips would include: hook missing; worn blade (hook will catch, then slip); bad fingers; chain pegs; jacks; and wrong timing of the head."

"When a new rack is placed in the head, the constant scraping action of the hook has been known to scrape the paint on the sides of the rack until an obstruction is formed, preventing the hook from fully lifting the jack. Stretched leather harness straps is another cause for skips. In every instance where a defect occurs, if it is not a weaver's responsibility to correct it, a loom fixer is called at once."

Question: Aside from the possibility of a mixed bobbin of yarn causing a coarse end, and actual broken ends, what are other causes for coarse and loose warp ends?

Answers: "Loose warp ends can be caused by the weaver taking a tie-in end and wrapping it loosely around the beam or whiproll and allowing it to continue in this manner while waiting for the broken end in the loom beam to appear. However, there is no objection to tie-ins if they are wrapped 3 or 4 times around the beam and whiproll. Tension thus is exerted, and loose warp ends will not appear.

"Most weavers will continue to do this rather than take a body end at the selvage and take the last selvage end and place it in body end taken out. As this takes more time, most weavers will use tie-ins. A loose warp end at first glance may appear as wrong draw. Supervisors constantly check up on this defect to prevent its occurring.

"Coarse ends made by the weaver will occur when, instead of a body end being used to replace an end out, the weaver takes a selvage end out and draws it through. If the selvage end is a 2-ply yarn and the body yarn is a single, as in the case of many of our styles, a resultant coarse end is woven.

"Drawing an end through the wrong heddle, even though it is drawn through the correct dropwire, will cause a coarse end effect. This defect can be caused by weavers with failing eyesight or by learners. Loose ends in the loom beam will in most instances drop on the floor when they come up, but some of these ends can occasionally become entangled with others and be drawn through. It is the weaver's responsibility to check on these ends."

Tying in with weave room defects was a discussion on the causes of soft and hard size—this is not directly a weave room fault. As this was almost listed as a major defect at one period, the discussion probed the causes and the means taken to prevent and overcome it. Added to the record it enhanced the value of a reference file.

Question: What are some of the causes of hard and soft size, and how were many of these causes overcome?

Answers: "Though this fault has been greatly eliminated through the adoption of rigid controls, the effect on weaving follows: When

slashers stop for any reason a skin will form on the size. When the size is delivered to the squeeze rolls (if not completely boiled out) it presses into the ends and forms a hard size.

"When slashers are stopped, size on the copper rolls will jell when exposed to the colder air. The squeeze rolls cannot squeeze out this hard size. Hard size baked in by the cylinder, forms what is called a peanut-brittle effect the full width of the ends. Weavers, combing out the hard size, chafe the warp ends and this defect distinctly shows in the cloth.

"Soft size can be caused by a wrong formula—too much water without enough size for the penetration desirable for weaving. Yarn chafe marks will show from the reed. Soft size is usually indicated by the appearance of snowballs — short, bunchy appearing fibers behind the lay.

"A viscometer control in the slasher now indicates with a loud buzzing signal when the size becomes too heavy or too light. In addition, slasher speed can now be reduced to three yards per minute to allow the tender to tie broken ends, cut laps and put in leases — materially reducing this defect. The running slasher will not make a hard size. Automatic size control, moisture control, variable speed drive, and a homogenizer are a few of the other controls that help to maintain the quality of the loom warps."

Owing to the time allotted the secondhands at these conferences, discussion of each defect was brief, but always well prepared in advance. Everything was informal—the supervisors spoke freely and without restraint. Though the actual discussions on defects were limited to the secondhands of the second shift, higher officials and executives occasionally sat in, but only to listen. They took no part.

It was rather an innovation for the secondhands to hold their own quality conferences, and they responded to it wholeheartedly. It soon became apparent that the secondhands were the first line of attack on any quality drive, and that their knowledge and experiences, when combined, was one of the most formidable weapons in eliminating quality defects.

Any mill cannot help but profit from these conferences, and a planned program encompassing a series of them, soon pays off not only in higher quality, but also in a constantly sustained quality interest in which supervisors and employees alike steadfastly remain quality conscious.

Yes, it could happen in YOUR plant.....

but it can be avoided and here's a way to do it

■ WHILE the operator of the lift truck pictured here in such an unusual position was in the process of loading the trailer on which the lift truck's front wheels are resting, the trailer rolled away from the shipping platform, causing the dock board, lift truck, and its operator to drop toward the ground.

Luckily, the long prongs or forks of the lift truck caught in the roof of the trailer and tore a hole through it, holding the lift truck up off the ground.

According to the report, the lift truck operator doesn't remember how he got clear of the trailer, but he jumped or was thrown about eight feet to one side, avoiding an accident which easily could have been fatal.

As a result of this freakish accident, a safety rule was installed which will make it impossible (if the rule is complied with) for trailers that are being loaded to slip or slide as this one did. Here is the rule that was established:

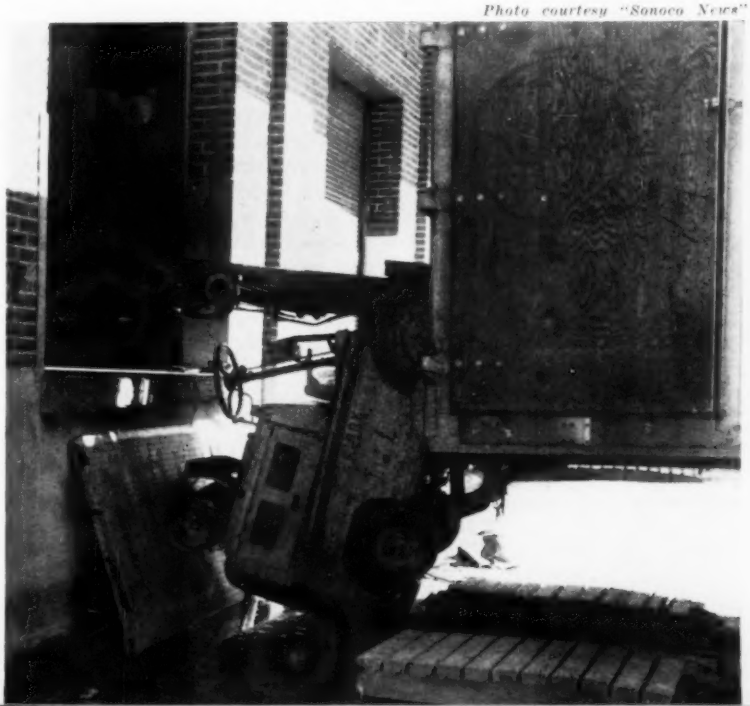
"In all departments that have a fork truck trailer loading or unloading operation, the safety procedure shall be as follows:

"1. When the truck driver parks the trailer, whether he disconnects the tractor or not, he shall chock the trailer wheels and set the brakes.

"2. The supervisor or foreman in charge of the operation shall see that the wheels of all trailers are all chocked before allowing the loading or unloading operation to begin.

"3. The fork truck driver shall also check every trailer to see that the wheels are chocked before beginning a loading or unloading operation."

Photo courtesy "Sonoco News"



Since more than mere transportation is involved, buying a used lift truck is not like buying a used car. The lift truck, as illustrated above, must be matched against the work to be performed and against the area in which the work is to be done.

HOW TO SHOP FOR

Numerous used lift trucks are being purchased by the textile industry. They can be a good investment or a source of trouble—depending on the care with which they are selected. Here are checklists which will help mill men to get the right truck for their jobs.

by R. F. Moody
Hyster Company

Exclusive

WHEN a used lift truck is being considered for purchase, both its basic specifications and its operating condition should be carefully analyzed before a commitment is made. A reputable dealer will provide invaluable assistance, but in most instances the potential customer knows his requirements and his plant far better than does any outsider. Being aware of the factors to consider, he will be in a better position to advise the dealer of his needs.

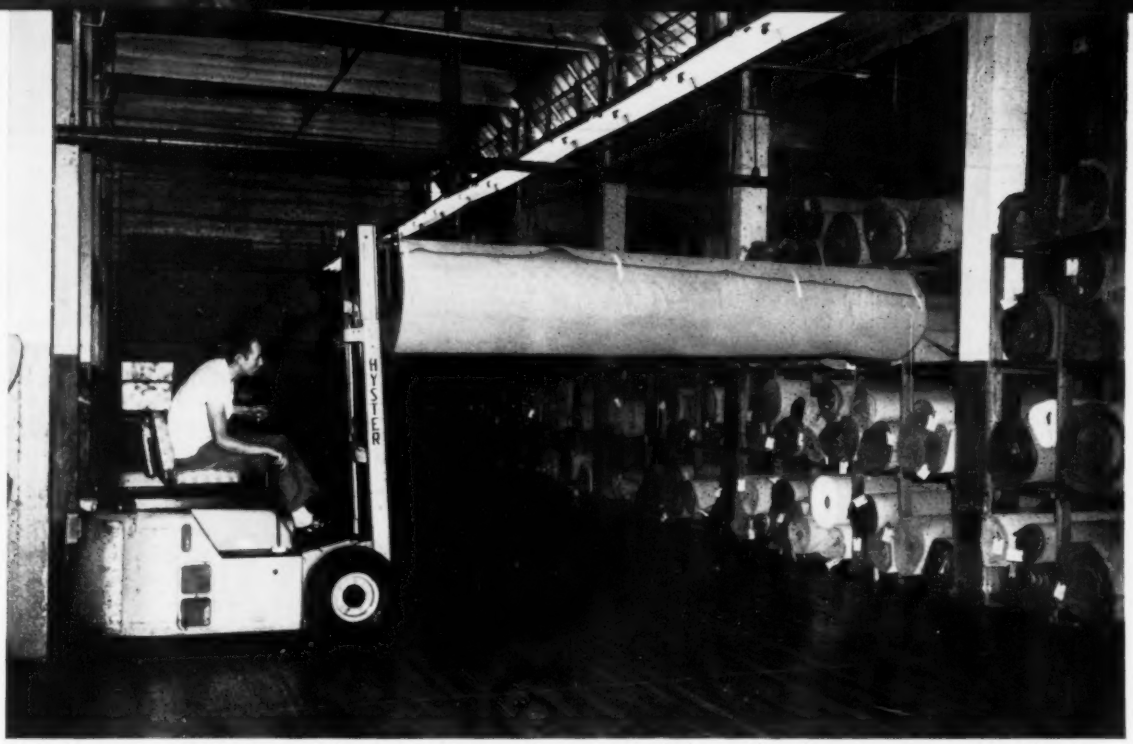
For buying a used lift truck is not like buying a second-hand car. With a car, almost any model of any make is available in the immediate vicinity of a prospective buyer. But lift trucks are made in substantially fewer numbers than automobiles. Each truck must be matched against the jobs it is to perform, and the areas in which it is to perform them. Thus, getting the right truck for the right job is much more difficult—and requires more careful analysis—than the purchase of a car which is to be used only for transportation.

Secondly, a lift truck is a piece of capital equipment. If it breaks down, more than inconvenience results (production schedules are disrupted, time is lost, operating costs mount). So if a used truck is being bought for production operations—or even if it is to be used only for standby service—care and skill must be exercised in analyzing its condition.

Why Buy Second-Hand Equipment? Why should a used truck be considered at all? New equipment is obviously more reliable, safer, and has refinements that are unavailable in used models, even though they be of recent vintage.

Of the numerous reasons for purchasing a used lift truck, one is most important—lower first cost. The amount that can be saved by purchasing second-hand equipment depends entirely on the individual truck. Generally, used trucks are offered under one of two conditions, "as is" or "rebuilt." Actually some manufacturers suggest three basic categories for used lift truck equipment: "as is," "good value" or "hy-quality."

The "hy-quality" tag is confined to trucks that are rebuilt to factory standards and are warranted for a fixed period of time. The "good value" tag is applied to a truck that has been put in first-



Often the storage system adopted in the plant is based on the ability of the truck lift to handle weighty and awkward loads such as pictured above. Select the used equipment with skill and care, for a broken-down lift truck is more than a nuisance.

USED LIFT TRUCKS

class operating condition but is not necessarily completely rebuilt. The "as is" truck is exactly as stated—in the same condition as it was when traded.

Most dealers do some work on trucks that are over four or five years old. If the second-hand truck that you are considering is of this age and has been reconditioned but not rebuilt, it can be expected to have a life of 60-70 per cent of that of a new truck.

If, on the other hand, it is only three to four years old, and again is properly reconditioned but not necessarily rebuilt, it should have a useful life of 75-85 per cent of a new truck. The life of a rebuilt machine, on the other hand, should approximate 90 per cent of the life of a new machine. Naturally, these are general figures and apply to the mechanical condition of a truck operated under normal conditions and receiving normal maintenance.

Yet the cost of used equipment is not proportionate to its anticipated life. It is less. How much less depends on the machine and on local circumstances. It may be as little as 30 per cent, as much as 70 per cent, but regardless of the percentage, there can be a substantial saving.

Naturally, savings are important when capital is limited, and therefore a used truck is often purchased by the small manufacturer or distributor. It allows him to mechanize his operations and save approximately the same amount of time and money as he could with new equipment. Many used truck purchasers are companies that never have owned a lift truck before.

This is not always the case, however, for larger companies frequently buy used equipment to supplement existing fleets during peak production periods, either daily or seasonal. Since a used truck costs less, the depreciation that must be charged against it as overhead when it is not working is much less than what might be charged against a new machine, and therefore a used truck frequently provides a good answer to the "standby" equipment problem.

Still another reason for buying a used lift truck is to fulfill production requirements while waiting on new equipment. In today's market, delivery of some models of lift trucks, and particularly those requiring a large amount of special engineering, are available only on several months' delivery. Utilizing a second-hand truck to meet immediate production demands is often the most economical solution to this problem.

How to Get the Right Truck. The first requirement for a lift truck—either new or used—is that it be adaptable to the job the prospective buyer has in mind; and that it be capable of operating efficiently in his plant, yard, or warehouse. Therefore, the same basic conditions that must be analyzed when

TABLE I. General truck specifications.

TABLE I

General Truck Specifications

Type of Truck _____

Make _____
Model: _____
Serial No.: _____
Year: _____
Availability of Replacement parts: _____

Rated Capacity, lbs. _____
At load center, in. _____

Load Arms length, in. _____
Thickness, in. _____
Width, in. _____

Lift Height, in. _____
Overall lowered height, in. _____
Free lift, in. _____

Turning Radius _____

Aisle Widths

90 deg stacking, in. _____
90 deg intersecting, in. _____

Max. Grades

Percent no load _____
Percent full load _____

Operating Speed

Travel speed: _____
Lifting speed: _____

Underclearance

Under uprights, in. _____
Under center, in. _____

Approximate Weight: _____

Floor Loading (With full load) _____

Type Tires _____

Type Power: _____

Accessories

Guards, load _____
overhead _____
Power steering: _____
Automatic transmission _____
Hour meter: _____
Fire extinguisher: _____
Towing hook _____
Others: _____

Special Attachments

Boom: _____
Scoop: _____
Hydraulic clamp: _____
Others: _____

TABLE II. Condition checklist for used lift trucks.

TABLE II

Condition Checklist for Used Lift Trucks

Visual Inspection

General Appearance: Good _____ Bad _____
Paint: Good _____ Bad _____
Fenders: Damaged _____ Good Condition _____
Guards: Damaged _____ Good Condition _____
Other: _____

Uprights
Condition: Good _____ Repaired _____ Damaged _____ Rollers _____ Slides _____

Chains: Drive Chains _____ Sprockets _____ Hoist Chain(s) _____

Frame:
Condition: Cut of Line _____ Welded _____ Repaired _____ Needs Repair _____ Good _____

Tires:
Type: _____
Condition: Load (Front) _____ Steering (Rear) _____

Operational Inspection

Engine:
Make _____ Model _____ Serial _____ Number of Cylinders _____
Condition: Good _____ Bad _____ Smoking _____ Noisy _____ Knocking _____
Needs: Replacing _____ Overhauling _____ Minor Adjustment _____ Nothing _____

Clutch:
Condition: Slips _____ Grabs _____ Needs Replacing _____ Needs Adjustment _____

Transmission:
Operated in each of these speeds Forward: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___
Operated in each of these speeds Reverse: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___
Condition: Noisy _____ Good _____ Needs Adjustment _____ Needs Replacement _____

Differential:
Condition: Noisy _____ Good _____ Needs Adjustment _____ Needs Replacement _____

Hydraulic System:
Hoist Cylinder: Leaking _____ Good _____ Needs Repacking _____ Bad _____
Tilt Cylinder(s): Leaking _____ Good _____ Needs Repacking _____ Damaged _____

Pump: Good _____ Noisy _____ Leaking _____ Slow Acting _____

Valves: Good _____ Leaking _____

Steering
Condition: Play In Wheels _____ Hard to Steer _____ Damaged _____ Repaired _____ Good _____

Electrical System:
Battery: Good _____ Needs Replacement _____
Starting Motor: Good _____ Slow _____ Sparks _____
Generator: Good _____ Sparks _____ Needs Brushes _____
Lights: Operative _____ Inoperative _____
Wiring: Good _____ Frayed _____

Miscellaneous:
Radiator: Good _____ Leaks _____ Overheats _____
Horn: Operative _____ Inoperative _____
Instruments: Operative _____ Inoperative _____

Remarks: _____

selecting a new truck apply also to a used one:

1. Obviously the truck must have the rated capacity to lift the loads in the potential buyer's plant. Most buyers like to obtain a machine rated at somewhat higher capacities than the maximum size load that they normally encounter just in order to be safe. This is good practice; but there is a limit, for the efficiency of a truck is greatest when the loads that are handled are closest to the machine's rated capacity. Operating costs, too, are less.

But capacity is not the entire story. Trucks are rated at a capacity of a given load center, generally 24 inches. This means that if the normal load is wider than 48 inches, the truck capacity is decreased. So, this is an important factor to check—namely, rated capacity at the required load center.

2. Other basic considerations are lowered mast height and truck stacking height. On occasion, buyers have purchased lift trucks only to find that the lowered height of the machine was higher than their doorways and thus there was no way to get the truck from one area of the plant to another—or that the truck was incapable of stacking to the desired height, thus wasting valuable warehouse or storage space.

3. The amount of under-clearance affects the areas in which a truck can be used, and here there are two requirements, as shown in Table I—namely, the under-clearance under the uprights and also under the center of the frame. Too little clearance may cause the truck to "hang-up" on ramps or in yards.

4. Floor loading is important, particularly in older plants, so the total weight of the truck with and without load should be considered before purchase. There is actually no way of quickly determining the structural capacity of an old building other than to refer to construction prints if they are available, or to make an engineering survey. However, obviously it would not be wise to buy a truck that would weigh on the order of 13,600 lb and carry a 10,000-lb load without carefully checking the ability of the floor and building to carry it.

The determining factor, of course, is not total weight but rather its distribution. A four-wheeled machine with pneumatic tires will distribute weight and load over more floor area than a similar machine with solid or cushion tires. Checking with the dealer on both of these considerations is a wise precaution.

If the truck is to be used in an elevator, then weight alone is the dominant characteristic, whereas

if the vehicle will operate inside of a trailer, both weight and floor loading are important.

5. Finally, the type of tires that are on the truck govern to a large extent where it can be used. Solid tired machines, for example, are not adaptable for outdoor use. Pneumatic tired machines can be used either in or out of doors, as can to a lesser extent a solid-cushion machine. Again, these are points to consider when looking at a second-hand truck.

Naturally there are many other considerations as are pointed out in Table II. Some of these may be unimportant in particular applications. Others may govern whether the truck can be used successfully. But in any case, they should be carefully checked if maximum benefit is to be obtained from a used machine.

How to Determine Truck Condition. Over and above the ability to meet a given requirement is the mechanical condition of the truck being considered. There are many points that should be checked here, perhaps the most important of which is that the purchaser buy from a dealer who represents a well-known and reputable lift truck manufacturer. But more than that, any dealer likes his customer to know precisely what he is getting—there is less possibility for misunderstanding. Both parties to the transaction are satisfied after the sale is made. Among the things that can be checked are the following:

1. If the truck has been reconditioned and is warranted, obviously used parts are available. If, however, it is offered in the "as is" condition, the prospective buyer should determine whether replacement parts can be obtained. Depending on the manufacturer, service parts generally are available for machines ranging from 10 to 20 years old. However, they may not be available from stock for the older machine, and this will involve a delay if the truck breaks down. It always is wise to check to inquire if the dealer has a replacement parts book that lists the parts for the particular truck in question, and what parts he has in stock.

2. The manufacturer's name is an important consideration. Like many other industries the fork truck industry has consolidated, and some trucks were made in earlier years that are no longer on the market. A used truck with an obsolete name is a poor buy.

3. A rebuilt truck, of course, is usually in better condition than one that is offered "as is." Generally, it has been steam-cleaned and painted; the frame has been repaired by welding if necessary; it has a new clutch and new brake lining; the engine has been rebuilt; the hydraulic system has been overhauled; wheel bearings have been checked and packed; tires are in good condition and other components have been checked and repaired.

In some instances, however, an "as is" truck is an excellent buy. Unusual circumstances may have required the former owner to trade it in. If his name can be determined, he can be asked. Otherwise, the general reputation of the dealer can be relied upon. He is a businessman, and probably has hopes of selling the used truck buyer new machines at some future date. He wants a satisfied buyer as much as the buyer wants a good used truck.

4. Most used trucks do not come equipped with attachments other than forks. This, of course, is not always the case. A machine may have mechanical or hydraulic attachments which, if they can be used, are a "plus" in the sale.

However, the buyer who purchases a used truck with the idea of fitting a new hydraulic attachment to it sometimes is faced with a costly or possibly an insurmountable problem. Current attachments may not be adaptable to obsolete trucks. Thus, a very cautious approach is recommended when purchasing a used machine to which a new hydraulic attachment is to be fitted. With mechanical attachments, the problem is usually much simpler.

5. A visual check of the truck is obviously wise. Unless the prospective buyer knows the dealer well, it is wise to look at the truck in question rather than merely at a picture. Its general appearance, cleanliness, and absence or presence of waste, dirt, and grease is a good indication of how well the truck has been maintained.

6. Mechanical condition is, of course, very important. Among other things that the buyer will want to check will be the action of the clutch pedal to determine whether it has the proper amount of "free pedal travel." Too much may indicate a worn clutch.

The steering column should be checked for play, and if the truck is equipped with power steering, the operation should be checked without a load on the forks (generally the most severe condition).

The truck should, of course, be driven and the condition of the brakes determined. Driving it over rough ground will shake off any parts that are loose, and will disclose serious structural defects. Driving it up a grade to see if the engine maintains power is recommended, and during tryout the prospective buyer should drive it through each gear ratio to determine the condition of the transmission.

7. When the truck is being driven, the operator should speed it up and decelerate it abruptly to determine if there is play in the gears. Alternate deceleration and acceleration will cause a "clunk" if the transmission is not good.

8. The truck should be checked under load to make sure that the lift mechanism works properly and that it will support the rated load. The tilt mechanism should be checked at the same time. Running the truck through the lift and tilt cycle will indicate if the relief valve is kicking out properly at the end of the tilt or lift cycle, and also if there is wear in the valves or packing. A good approach is to make this test on a clean surface or a piece of kraft paper. Oil leakage will show up immediately.

9. Naturally, operation of the engine should be analyzed by several means. One way is to use a compression gauge, which will indicate if there is valve leakage or if the rings are worn or cracked. Putting a vacuum gauge on the engine intake manifold will also indicate the condition of the valves. A very simple check can be made by removing the oil "dip stick" and visually inspecting the condition of the oil.

Allowing the truck to idle for

15 to 20 minutes is also a wise precaution. If it overheats, the cooling system may be defective. At the same time, the water in the radiator should be checked for rust and scale, the hose should be inspected for cracks, and all connections should be visually inspected for stains that would indicate leakage.

10. The speed of the lift is an indication of the condition of the hydraulic system. If the hoist cylinder rises slowly, the pump may be worn. Likewise, if the hydraulic fluid becomes hot, the pump may be in bad condition. Above all, it is wise to make sure that the lift and tilt cylinders are not scored and that the flexible connections in the hydraulic system do not show signs of wear.

11. The condition of the uprights is important, since they support the load. If they are damaged or bent, they may not be capable of supporting the rated load of the machine. This should be determined. So should the condition of the load rollers and side rollers, for excessive side play would indicate replacement. Naturally, all bushings and bearings should be checked, particularly those that act as pivot points on the machine. The condition of the steering spindles can be determined by looking to see if they are worn and still in one piece, or if they are ball or roller bearing types to determine if any balls are missing from the races.

12. The electrical system (particularly the generator, battery, and distributor) should be visually inspected. Starting the engine will indicate the condition of the starting motor. If it kicks over fast, the starting motor probably is in good condition; if it turns the engine over slowly, either it may have to be reconditioned or the battery may have to be replaced.

It is an easy matter to take the bank off the generator to determine if the brushes are sparking, just as it is a simple matter to check the wiring for frayed or worn condition. And a visual check of the battery, while not fool-proof, may indicate if a new one is required.

13. The condition of the truck tires is, of course, important, for tires are expensive. If the sidewalls are badly notched or bruised, new tires may be required. If, on the other hand, the tread is worn thin and the tires have not previously been recapped—this can be determined by looking for separations along the outer rim—recapping may solve the problem. Actually, an industrial truck pneumatic tire can be recapped several times.

Solid cushion tires present another problem. Badly worn units cannot be recapped—they must be replaced. But tread is no indication since there is little tread on a solid cushion tire to begin with. Points to check are the thickness of the tires, the condition of the bond between the rubber and the wheels, and the absence or presence of "chunked-out" sections.

But equally important is the type of tread on the tires and the size of tires with which the truck is fitted. If the truck is to be used indoors, obviously an outdoor rough tread is not desirable. Conversely, if it is to be used outdoors, a smooth indoor tread may or may not perform satisfactorily, depending on the climate.

14. There are many other points to analyze: condition of grease fittings; condition of instruments; condition of lights (if they are available in the truck); and last, but not least, the condition of the horn. This is a small accessory and relatively inexpensive, but it is surprising how many times a horn is inoperative.

Close Checks Pay Off. All this sounds complicated. But it sounds more complicated than it really is. And any energy that the prospective buyer expends in making sure that he is getting the truck that he wants, and in the operating condition that he wants it, is well worth the investment. For a used truck may cost from a few hundred to several thousand dollars, and not only the manufacturer who made the truck, but the dealer who is selling it, will prefer to have a satisfied customer. The checklist may be the difference between the two.

U.S. dyestuff output off 6 per cent in '57

■ THE TOTAL domestic output of dyes in 1957 was 143 million pounds —a decline of six per cent from the 1956 total, according to a report from the United States Tariff Commission. Sales declined 18 per cent in quantity and 11 per cent in value of sales.

The greatest decreases were in the production and sales of dyes grouped by Colour Index number, and decreases in production were reported for many important low- and medium-priced dyes among individual dyes for which statistics are given in the report.

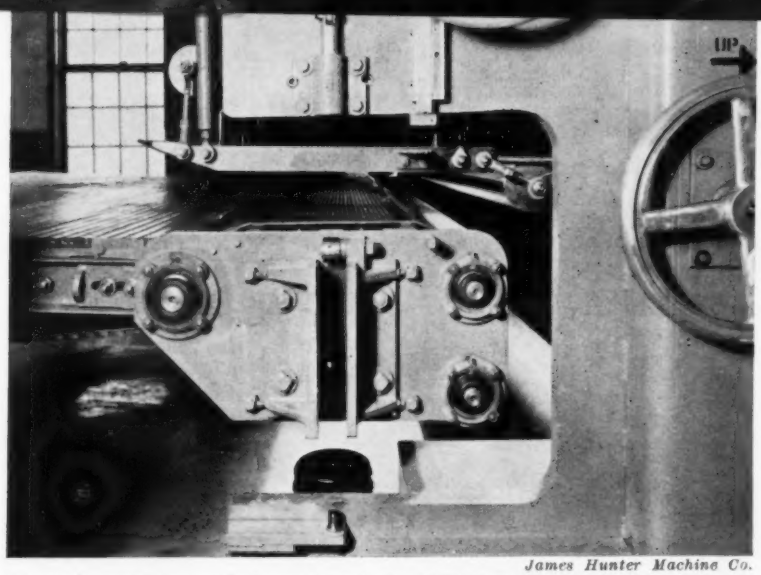
On the other hand, the production of a number of important dyes increased in 1957, although the sales of some were less than in 1956.

Four chemical classes of dyes accounted for 77 per cent of the total quantity of all dyes produced—azo dyes, 35 per cent anthraquinone vat dyes, 19 per cent; sulfur dyes, 16 per cent; and indigoid and thioindigoid dyes, 7 per cent. Output of all these classes was smaller than in 1956.

With respect to class of application, two classes accounted for about half of the total output of all dyes in 1957. Vat dyes accounted for 30 per cent, and direct dyes for 20 per cent.

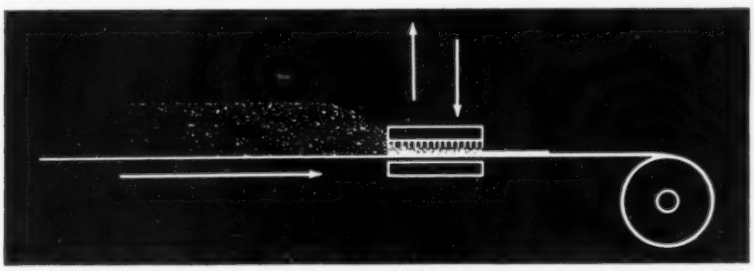
Two chemical classes of ungrouped dyes accounted for 65 per cent of the total output in 1957. Azo dyes accounted for 37 per cent and anthraquinone vat dyes for 17 per cent. Three classes of ungrouped dyes arranged by class of application accounted for about three-fourths of the total output—direct dyes, 40 per cent; vat dyes, 17 per cent; and acetate dyes, 16 per cent. The output of all this latter group, except vat dyes, was larger in 1957 than in 1956.

Copies of the report on production and sales of dyes in 1957 may be obtained by writing to the United States Tariff Commission, Washington 25, D. C.



James Hunter Machine Co.

Needle loom, showing needle board, feed sheet, and hand wheel for needle bed adjustment.



Sketch showing action of the needle board in felting loose fibers into a nonwoven fabric.

NEEDLE FELTING

One of the earliest nonwoven fabrics keeps pace with its competitors

by E. F. Didier
General Works Manager
Needle Division
The Torrington Co.

Exclusive

FELT is defined as a fabric built up by the interlocking of fibers by a suitable combination of mechanical work, chemical action, moisture, and heat. Felt may consist of one or more classes of fibers: wool, reprocessed wool, and reused wool with or without admixture with animal, vegetable, and synthetic fibers, including sisal, jute, and glass fiber. Cotton felts are similarly made in the many combinations of materials.

Needle felt, whether made from natural or synthetic fibers, begins as a continuous batt (lap) of specified thickness and width fed to a machine which performs a needle felting operation by punching barbed needles into the batt; the barbs on the needle engage the fibers and push them through the mass of material to interlock the individual fiber strands with each other.

The thickness and density of the finished product is a factor of the initial thickness of the batt and subsequent layer build-up, as related to the number of needle punches per linear unit of movement. To increase either thickness or density the felt may be rerun to concentrate the number of needle punches or to "weave" in additional layers of fiber material.

No other operation follows the needle felting of the batt, except for whatever finished product processing may be necessary.

When the batt is superimposed on a woven fabric and both are needle felted together, elongation under tension is less than for the simple mechanical interlock structure. Woven inserts give increased strength for the same weight or thickness.

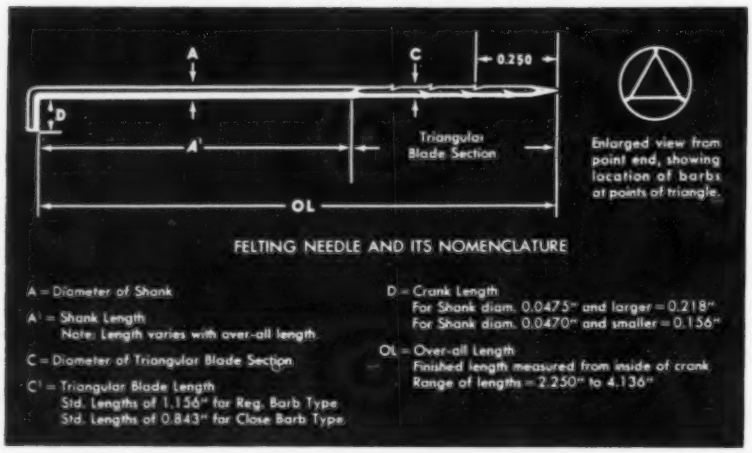
LOOMS used for needle felting are essentially punch presses in which the batt is carried over grid bars and stopped, momentarily, while the needle board descends to punch the needles into the batt. The motion pattern is intermittent, with the actual forward linear motion of the batt related to the speed of the reciprocating motion of the needle board to produce the desired characteristics in the felt. That is, the batt moves forward a fixed and predetermined distance each time the needle board descends to punch the material.

The needle board, attached to the reciprocating beam, usually is made of very fine grade, selected mahogany because of its uniform grain structure and dimensional stability. Some success has been attained with magnesium needle boards. The length of the needle board is, of course, a function of the machine size, designated in widths from 36 in. to 250 in. Development work is now under way by one prominent loom manufacturer to build a 450-in. machine.

A concerted effort also is being made to increase the operating speed of needle looms to meet increased production demands as well as production cost considerations. Loom speed has been increased from 125 rpm to 1,000 rpm. Improved design concepts have provided more symmetrical balance, less weight in reciprocating parts, and smoother, quieter operation.

The number of needles per board has been increased (approximately

Single blade (left) and double blade felting needles.


A
C
0.250
D
A'
Triangular Blade Section
OL
Enlarged view from point end, showing location of barbs at points of triangle.
FELTING NEEDLE AND ITS NOMENCLATURE
A = Diameter of Shank
A' = Shank Length
Note: Length varies with over-all length
C = Diameter of Triangular Blade Section
C' = Triangular Blade Length
Std. Lengths of 1.156" for Reg. Barb Type
Std. Lengths of 0.843" for Close Barb Type
D = Crank Length
For Shank diam. 0.0475" and larger = 0.218"
For Shank diam. 0.0470" and smaller = 0.156"
OL = Over-all Length
Finished length measured from inside of crank
Range of lengths = 2.250" to 4.136"

9,000 per board for the 250-in. machine and approximately 16,000 per board for the 450-in. machine) to produce more concentrated penetration and higher production. Still other improvements intended to increase production rates are in the development stage.

Obviously, a critical component of the needle loom is the needle board and the thousands of needles that must be placed by hand. The needles are not lined up in straight, symmetrical rows, but rather in arrangement patterns that have been figured out mathematically and checked by actual usage results. One of the latest formations is a modified herringbone placement that produces the most advantageous punching design and resultant interlocking of fibers.

The thousands of small holes that must be drilled in each needle board, into which the needles are inserted, present a real problem for the loom builder. The holes must be absolutely true and straight and drills of this small size are easily deflected in many directions by the grain in the wood. Naturally a needle inserted in an off-true hole is, likewise, off-true and must be straightened by hand after insertion so that the needle will enter the proper guide hole in the bed of the loom.

The magnesium alloy needle boards developed by the loom builder reduced the problem of straight holes, but did not completely eliminate it because even metal contains a certain amount of "grain." Other problems also are apparent with the metal board. For example, when using the normal single blade felting needle the triangled and barbed portion of the needle fits into a hole that is approximately the same size as the shank of the needle. If the needle blade varies slightly to the large size because of high barbs, it cannot readily be inserted into the magnesium board holes. If the needle is forced into the hole the barb scores the hole itself, making it difficult to remove the needle when worn out or broken.

The single blade needle can be used in wood boards with less difficulty, but protruding barbs eventually will wear the holes so that the boards will become useless because of the excessively loose fit of the needle. The worn board can be redrilled for a larger size needle.

THE NEEDLES themselves are available in many sizes to satisfy the requirements of the finished product, the kind of raw material used, the thickness and density of the felt, etc. We manufacture needles ranging from the smallest, 20 x 40 x 4 1/16 in., made from 0.037-in. diameter wire, to the largest size, 9 x 11 x 3 1/16 in., made from 0.140-in. diameter wire. The largest size is a crankless type of needle, used in a converted Fales machine for making cushion padding for automobile seats.

Felting needles are made in single and double blade construction (see illustrations).

The double blade needle was developed to overcome the difficulties experienced with single blade needles. The part of the shank that is anchored in the needle board is of larger diameter than the "working end" of the needle. The larger size hole in the board allows the use of a larger, stronger drill which makes a straighter hole. With a larger clearance hole through the board there is no difficulty inserting the barbed portion of the double blade needle.

A single blade needle made with a large diameter wire could be inserted and removed as easily, but would not be acceptable for some kinds of felting. It is not unusual to "needle" a board with size 17 x 19 x 3½ in.-needles and then change to size 16 x 19 x 3½-in. when the board holes have become worn. The only adverse effect of this practice may be the holes left in the felted product resulting from the needle penetrating beyond the triangle portion as far as the larger diameter shank.

FELTING NEEDLES are made in two types with respect to the spacing of the barbs. Regular barbs are spaced ¼ in. apart in each row, while close barbs are spaced ⅛ in. apart in each row. For special purposes high or low barbs can be made on any type of felting needle.

Barb depths have been standardized for general purpose needles as a compromise between wear life and breakage. Even a slight increase in the depth of a barb can cause excessive breakage, while a barb that is too shallow will not felt properly. Excessively high barbs also have a tendency to tear material, seriously affecting the tensile strength of the felted product.

Many felting mills have a regu-

(Continued on page 203)

A few pointers on what to do, look for, and expect in

running cotton combers

by Efriam Z. Cohen
Textile Technologist
Exclusive

TO THOSE familiar with the comber, the necessity for special care and experience in operating this complicated machine will be apparent. Setting the various actions demands great exactness and knowledge of the material being processed. Negligence will cause considerable waste and probable damage to some of the machine parts. There are several reasons for waste increasing more than is desirable, and the causes are usually based on incorrect machine timing and setting.

The method of setting and the gauges used for the operation vary, of course, with the different types of machines.

An index wheel at the end of the main shaft is marked with numbers suitable for various settings, and by turning these numbers to the fixed pointer, the cam, cylinder, etc., can be fixed on their shafts and adjusted correctly for any given set of conditions.

TIMING AND SETTING

Following is a guide for the setting and timing of the parts of Nasmith combers:

Cylinders. At Index 2½ set the cylinders in the middle of each head and screw tightly on the shaft so that the front edge of the plain segment is 2½" from the back of the steel detaching roller.

Nipper Crank Stud. Refer to Fig. 1. Screw up Stud A in the slot in the index plate so that its center is opposite mark 37 as shown. Put in the slide bar B and bolt it up with the set screws C, each projecting equally. The position of the stud determines the time when the nipper reaches the detaching roller on which the good piecing of the cotton lap fed depends.

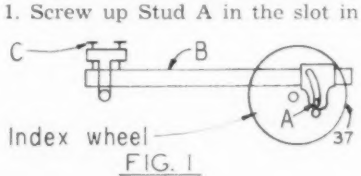


FIG. 1

The Nipper. At Index 19, the nipper being at the forward end of its stroke, set a cushion plate (see Fig. 2) parallel to the steel detaching roller (by means of the nuts) and at the required distance from it—according to the amount of waste to be taken out. The pivot set screw must be loose when this

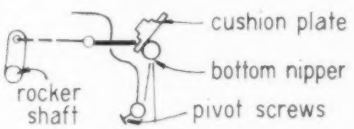
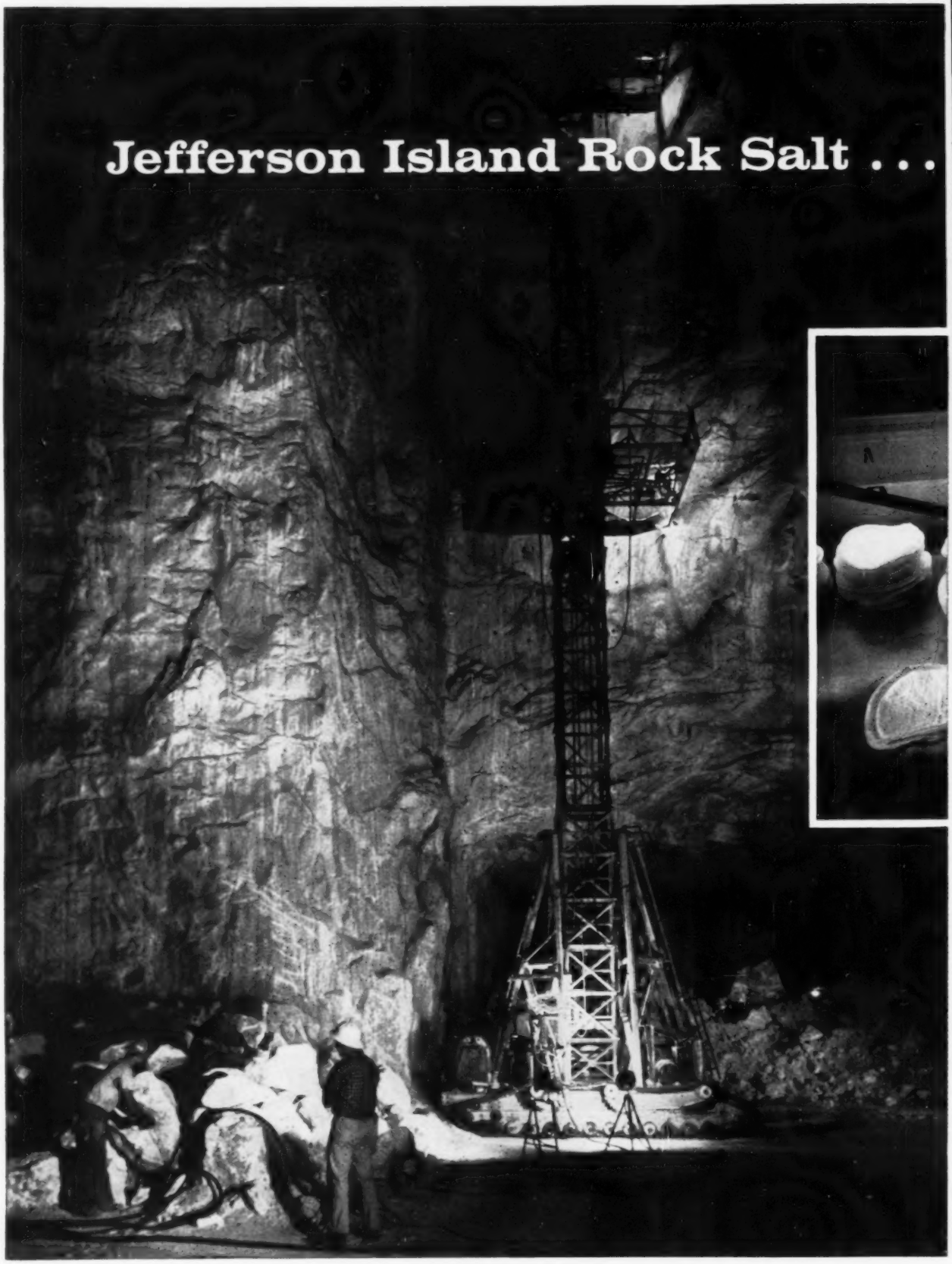


FIG. 2

(Continued on page 123)


Jefferson Island Rock Salt . . .

. . . so pure that every textile user benefits

Diamond Crystal pays particular attention to the elimination of insoluble matter. Filter pads are run every 40 minutes under Diamond's quality control . . . thus assuring uniform high purity.

For many years, rock salt from JEFFERSON ISLAND has made possible many economies in dyeing textiles.

Mined in Louisiana from one of the world's purest deposits, this rock salt for brine baths results in your products being consistently better. The big story is up to 99% purity at the source.

TWO GREAT NAMES MERGE AS ONE

Recently, the Jefferson Island Salt Co. merged with Diamond Crystal, a company known for more than 70 years as a quality producer of flake and granular salt. For example—they are the leading supplier of salt to high quality food processors.

INHERENT PURITY—KEY TO COST SAVINGS

Inherent purity in Diamond Crystal salt is a major factor in all industries. For instance, textile plants can use rock salt from Jefferson Island *without* costly side reactions caused by impurities.

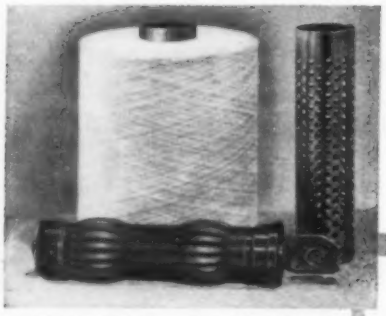
And high purity CMF (calcium magnesium free) replaces Glauber's and common salt to produce higher quality textile products.

For immediate service and consultation on your salt problem, call the nearest Diamond Crystal sales office. Or write for the information booklet "Salt in Industry", to the Jefferson Island Salt Div., Diamond Crystal Salt Co., St. Clair, Mich.

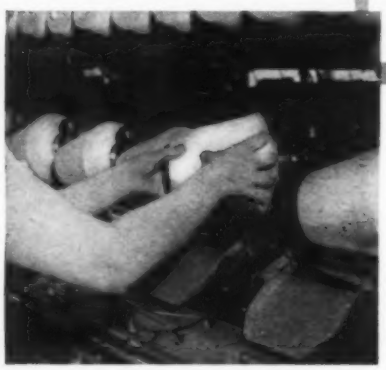
DIAMOND CRYSTAL SALT

SALES OFFICES: CHARLOTTE, ATLANTA, NEW ORLEANS, LOUISVILLE, BOSTON, NEW YORK, AKRON, DETROIT, CHICAGO, MINNEAPOLIS

PLANTS: AKRON, OHIO . . . JEFFERSON ISLAND, LA. . . ST. CLAIR, MICH.



Ball bearing balloon tube holder for 1⅝" dye tubes on Model 102.



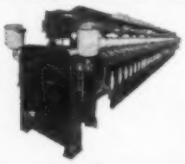
Doffing package on Model 102. Holder swings out. Balloon spring easily releases package.

1⅝" dye tube holder and pressure assembly on Model 75.

Dye package wound on Model 75 is exceptionally soft — 5 Durometer reading.

FOSTER MACHINES

for winding dye packages



Model 102

Model 75

Special Attachments for Maximum Efficiency

The Foster Model 102 has, for years, been a favorite machine for winding cotton yarn dye packages, as has the Foster Model 75 for winding rayon and acetate dye packages. Basically suitable for these purposes, both machines have been made even more efficient by the addition of special attachments which are described and illustrated herewith.

FOSTER MODEL 102

For winding ⅝" dia. or 1⅝" dia. dye tubes the Model 102 is equipped with balloon type tube holders. Tubes slip over these holders easily and slip off just as easily . . . . thereby eliminating yanking and resultant distortion of the dye packages.

FOSTER MODEL 75

For winding 1⅝" dia. dye tubes the Model 75 is equipped with 1⅝" holders and pressure roll assemblies. The winding is done directly from the supply and requires no special feed rolls. Yarn tension as low as 4 grams and density as low as No. 5 Durometer reading can be obtained. The soft packages facilitate quick and uniform penetration of the dye liquor.

For more detailed information contact our nearest office.

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

Westfield, Massachusetts, U. S. A.

Southern Office — Johnston Bldg., Charlotte, N. C. • *Canadian Representative* — Ross Whitehead & Co. Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • *European Representative* — Muschamp Textile Machinery Ltd., Keb Lane Bardsley, Oldham, England.

is done. The normal setting is 3/8" to 7/16".

Cylinder and Top Nipper. At Index 33, set the nipper, with the spring on and without cotton, 0.0025" from the cylinder needles (see Fig. 3). The bottom nipper is

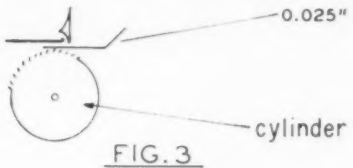


FIG. 3

set (up and down motion) as described under "Nipper Crank Stud."

Timing Nipper Opening. At Index 27 set the Leg J (Fig. 4) down

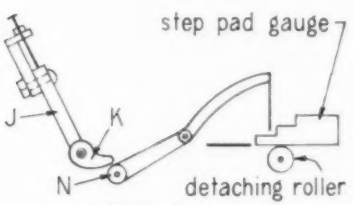


FIG. 4

until the Incline K just touches the Bowl N.

Spacing Nipper Opening. At Index 19 place the step pad gauge (Fig. 4) on the steel detaching roller with the flat 12 (3/8") between the nipper jaws, loosen the bolt that secures the Incline K to the Leg J, and set the point of the incline to touch the Bowl N.

Top Comb. At Index 19 the points of the top combing needle must always be 1/16" from the inner steel detaching roller. Insert the end of a 0.006" doctor gauge below the needle points (Fig. 5),

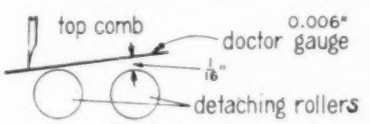


FIG. 5

allowing it to rest on the back steel detaching roller. Then, by means of screws, lower the comb until the doctor gauge lifts from the front steel detaching roller.

The Top Comb Lifters. At Index 11 set the lifters so that they just touch the bowl on the top comb arm.

The Feed Rollers. For long staple cotton set the roller as far back as the slot will allow. For short cottons and less waste the roller may be brought 1/4" forward. The amount of feed is regulated by the position of the pin in the feed roller ratchet, and a stroke of five ratchet teeth is usually equivalent to 1/4" of the lap. The lap roller ratchet must take as many teeth per stroke as the feed roller ratchet and should be set to take 1/2 tooth more than the required number.

Timing the Detaching Rollers. Loosen the cam and turn it as far back as it will go, then turn the index to 1 and move the cam forward until the roller begins to rotate backward. Test this setting by turning the machine by hand.

Timing the Top Leather Detaching Rollers. At Index 20 the eccentric should be set so that the lever just begins to move inward. The position of the top leather detaching roller should be set by placing the index at 19 when the roller should be as near to the top comb as possible. Care should be taken so that there will not occur any rubbing between the top comb and roller.

The Detaching Roller Clutch. Here the ring on the coupling should be set so that the clutch moves at 38. Then, loosen the stud on which the clutch fork is pivoted and turn to 10. Move the stud along the slot away from the gearing end as far as it will go and fasten. Turn until the clutch is fully out at 28, setting the holding clutch to prevent the rotation of the roller.

MAINTENANCE

Absolute cleanliness is a condition that cannot be overemphasized. For good combing, attention must be paid to cleaning, oiling, resetting, and periodic machine examination.

It is considered good practice to strip the comber down to the cylinder about every six months. Needles should be renewed when necessary; bent ones may be straightened by special pliers.

All settings, including the draw box roller setting, should be carefully made. It is very important that attention be paid to the condition of the leather detaching rollers. These should be ground true, removing the old varnish before applying new. They must be kept parallel, correctly timed, and equipped with good leather at all times.

All bearings must be oiled once per day; all locknuts periodically examined and kept tight; pivots of the leather detaching rollers should be wiped daily and lightly oiled.

The cleaning schedule must permit no fly to collect on any part of the machine; wiping about every two hours usually is required.

It is good practice to test sliver weight once a day and to check the amount of waste being extracted every two weeks.

COMMON DEFECTS

Web Curling. This is quite common and may be attributed mainly to some defect in the detaching roller action such as:

a. The leather top roller needs revarnishing, removing, or skinning up

b. The leather rollers binding in their loose end bushings

c. The detaching rollers not being parallel to each other

d. The atmosphere being very dry

e. Inadequate lubrication

f. Bad timing

Web Cloudiness. This defect of fine web may be caused by unlevel setting or covering of the nippers. If the nippers do not hold the cotton firmly all across the width of the web, the fibers are likely to be pulled through in tufts. This condition also increases waste. A bit of seed between the nippers may cause it.

Flocks. When these appear, check for damaged cylinder needles which are trapping and holding fibers. Wrong setting of rotating brushes and doffers or aspirators are often responsible for reducing the quality of the waste. It is only to be expected that for proper work every care must be given to the correct timing and setting of nippers, top comb, detaching rollers, and feed rollers. There must be frequent inspection of the top comb and cylinder needles.

Detaching Rollers Lapping. When such a defect occurs, the following steps should be taken:

a. Inspect top rollers for need of

(Continued on page 127)

New Long-

Non-stretching New NO-7876 Accotex Apron has an interliner of straight-lined cords that prevent apron stretching or curling in all weather conditions. Two thin layers of specially compounded synthetic rubber sandwich this core.

Life Apron

Armstrong development produces bottom aprons that bring new economy to long-apron systems

You'll be able to measure the life of your bottom aprons in years, not in months, when you equip your long-apron frames with the new Accotex NO-7876 Apron. This new thin-wall spinning apron has been running in test mills for nearly two years—and in every case, it's still in excellent operating condition.

The NO-7876 uses the same two-compound principle that has been so successful on double-apron systems. To meet the different conditions on long-apron systems, however, two entirely new rubber compounds had to be formulated for the NO-7876.

The rubber on the outer surface has greatly improved resistance to ozone and flex cracking. And it has the right fiber handling characteristics to insure good yarn control.

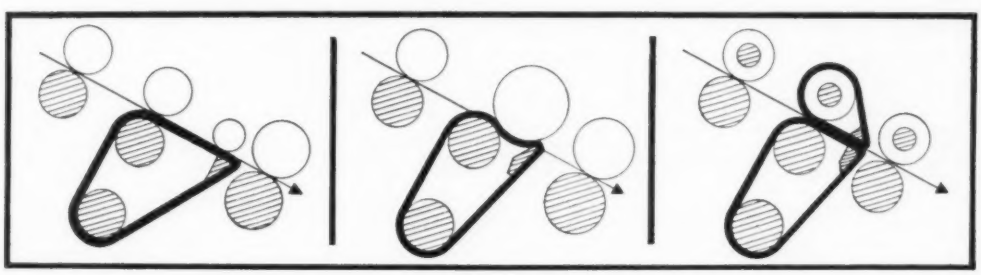
The inner surface is made of an abrasion-resistant rubber that has unusual conformability to the drive roll knurling. This assures accurate tracking and full power transmission. This inner surface also has a low coefficient of friction, allowing the apron to run smoothly over the nosebar without tucking or jamming.

These new rubber compounds help to give the NO-7876 long life. But there's more to good apron performance, of course, than long life. The NO-7876 incorporates all the time-tested features that have been built into millions of Accotex Aprons which are now helping mills turn out quality yarn.

One of the most important features is the patented seamless construction that uses a strong cord interliner to prevent stretching and curling. This construction also helps to give the super-flexibility required for good performance on long bottom apron systems.

In addition, the rubber compounds in the NO-7876 Aprons have built-in electrolytes that help to reduce the build-up of fibers on the apron surfaces.

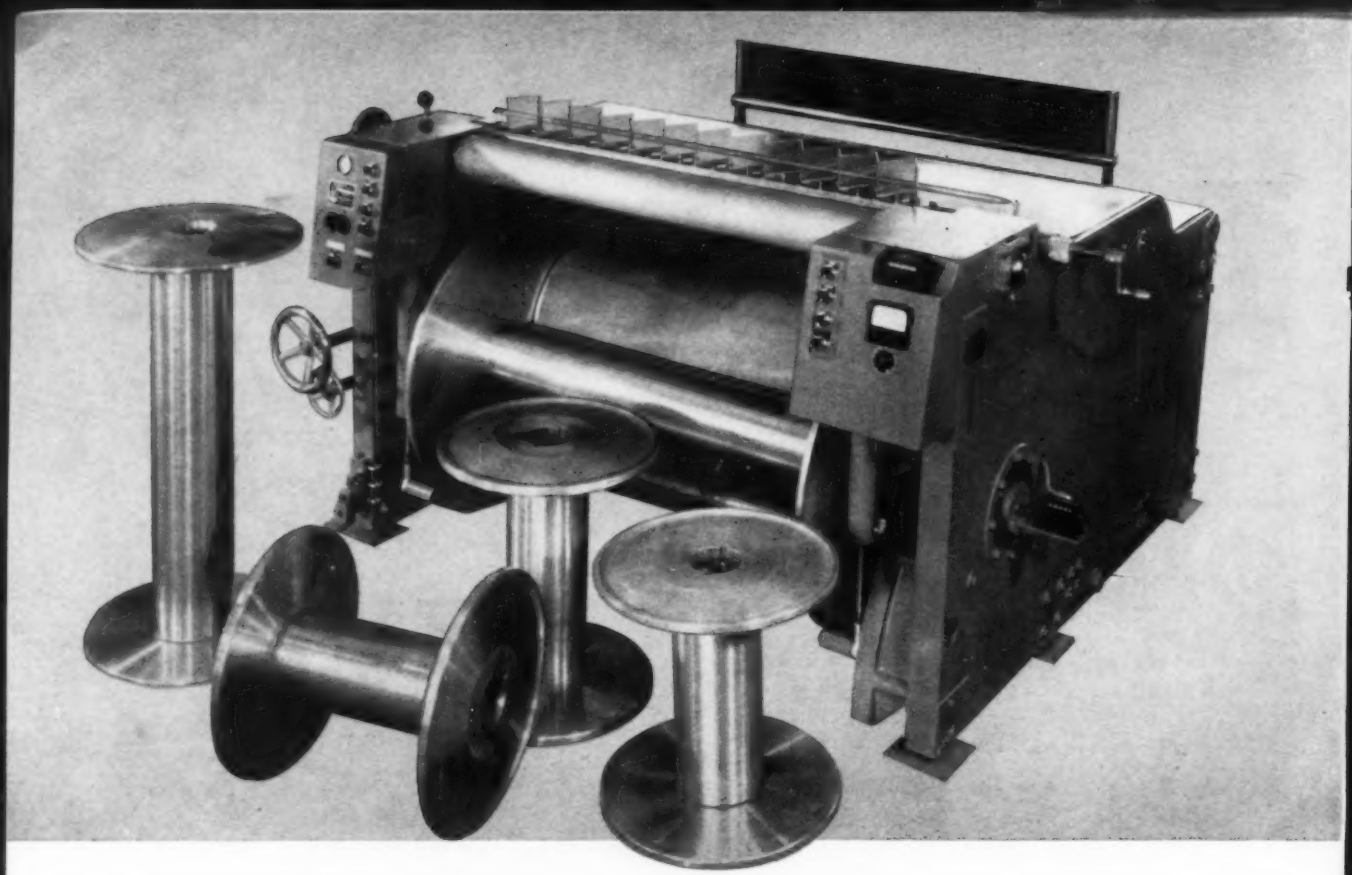
Ask your Armstrong man for more information on the new NO-7876 Accotex Apron. He'll help you set up a test in your mill. Or write to Armstrong Cork Company, Industrial Division, 6409 Ivy Street, Lancaster, Pennsylvania.



The Accotex NO-7876 is designed for use on spinning systems such as these.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts



Use any of these beams on this Versatile Warper

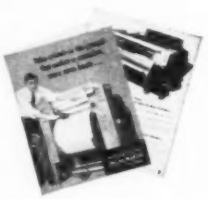
The versatile Kidde-Sipp Warper Model 149B is built to take a 50" beam, up to 32" in diameter—BUT it can quickly be converted to take a 42" beam, or even two 25's or two 21's.

If you don't need this flexibility, of course, you can get Model 149A. This warper can be furnished to accommodate either a 50" or a 42" beam.

Both models are dependable and sturdy, as are all Kidde-Sipp warpers.

Here are some other features of Kidde-Sipp Model 149 Warpers:

- Speed range is 8 to 1 (75 to 600 YPM).
- Electric brakes have independent rheostats for synchronized stops.
- Pressure roller and diversion roller are synchronized by a timing belt.
- You can choose either a fan reed or a positive expansion reed.
- Hydraulic action makes beam doffing work a girl can do single-handed.
- Beam tape attachment helps keep ends set in position.
- You get predetermined revolution and yardage counters.

The Model 149 is part of a line of dependable Kidde-Sipp Warpers. We'll be happy to supply you with detailed folders, which describe every warper we have. Write to Kidde Textile Machinery Corp., Bloomfield, N. J. Or phone Mr. Ruddick at PIlgrim 8-8100 in Bloomfield.

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recovering or varnishing

b. Inspect roller bearings for proper lubrication

c. Check for escaping oil which may be damaging roller facings

d. Check top clearers for correct settings

Thick and Thin Places in Web. When the leather detaching roller is short of oil, the nipper knife spring is broken, or the cam is slipping on the gear end, the web will have thick and thin places in it. When cotton is coming through in lumps, the tension on the feed roller spring is insufficient or the feed roller lever is lifted up or broken.

Long Fibers Passing into Waste. With strips of paper test nippers for unevenness of grip. Seeds wedged between the nippers, or detaching rollers, may cause this.

Slivers Breaking on the Table. Here it is obvious that the draft between table calender and the back feed roller of the draw box is too great, or heavier-than-usual laps are being combed — the heavier or thicker sliver has a greater proportional effect on the smaller back feed roller, compared with the larger table calender roller, without (in this case) having in any way altered the theoretical draft.

The remedy, if this be the case, is to increase the speed of the table rollers. A gear on the end of a short shaft driven from the back roller of the draw box is changed for this purpose.

The comber usually is supplied with three change gears for this position, and these are usually capable of arranging for the ordinary variation of lap weight. This change will also affect the web tension; and, if the tension were previously correct, it will be necessary to reduce the speed of the table calender roller in the same proportions that they were increased by the table tension gear. There is a change gear at the end of the cross shaft for this purpose, and again three change gears are provided. From this source the drawing rollers, with the exception of the front roller, are driven.

It should be clear from these statements that if the web tension is wrong, either being stretched during backing off or not taking up, then the web tension gear is changed to correct the condition.

Sliver Weight Wrong. A change gear is provided at the end of the bottom front calender roller for correcting this. The gear is a driven one, and this must be remembered in making draft calculations. This gear transmits motion to the front roller of the draw box and also to the coiler mechanism.

Any alteration of this gear does not affect the draft between the front calender roller and the coiler roller, nor between the front roller of the draw box and the front calender roller. But it will affect the drafting between the front and second roller of the draw box, thus altering the weight per yard of the delivered sliver.

1957 tufted carpet shipments up 27.5 per cent over 1956

■ TUFTED textile manufacturers' shipments of carpets and rugs larger than 4' x 6' amounted to 69.1 million sq yd in 1957, an increase of 27.5 per cent over the 54.3 million yards shipped the preceding year, analysis of the accompanying table from a recently published Bureau of the Census report indicates.

Shipments of scatter rugs (4' x 6' or smaller), bathmats, and sets totaled 31.1 million sq yd last year, an increase of more than 2.0 million yards over 1956.

Quantity of tufted robes shipped in 1957 showed a decline of 451,000, while tufted bedspreads increased by 779,000.

Manufacturers' Shipments of Tufted Textile Products

(All figures are in thousands)

Product	Unit of measure	July 1-December 31, 1957		January 1-June 30, 1957 (revised)		July 1-December 31, 1956		January 1-June 30, 1956	
		Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
VALUE OF SHIPMENTS, TOTAL			187,465		168,807		164,597		133,383
Tufted rugs and carpeting, total	Sq yds	51,639	154,074	48,536	144,446	44,908	130,312	38,269	110,864
Scatter rugs, bathmats and sets (rugs 4 ft x 6 ft or smaller)	"	15,529	33,478	15,553	33,015	15,279	33,628	13,670	28,163
Rugs and carpeting, including roll goods, (rugs larger than 4 ft x 6 ft)	"	36,110	120,596	32,983	111,431	29,629	96,684	24,599	82,701
Tufted robes	Number	1,847	4,827	208	580	2,132	5,549	374	955
Tufted bedspreads	do.	7,491	27,251	6,271	22,220	7,244	27,472	5,739	20,647
Other tufted products			1,313		1,561		1,264		917

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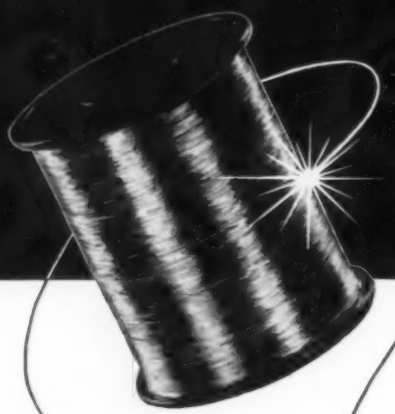

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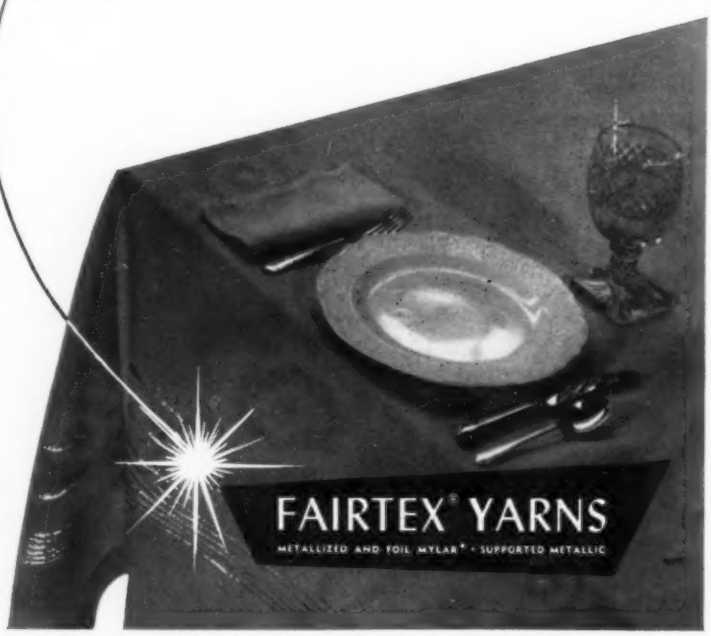

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3029

A progress report on

top drive filling

by Mike Turner*
Exclusive

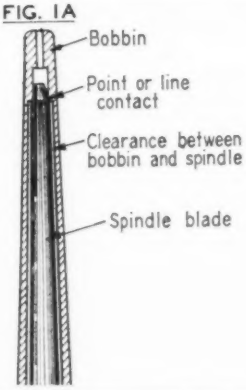
WHAT I intend to set forth here is certainly not a final answer to all the problems of top drive filling, but it is a look at some of the stumbling blocks and some of the theories incidental to this innovation—stumbling blocks and theories which I have had proved and disproved to me over the past six or seven years.

I am doing this with the hope that it may, in some measure, benefit the industry as a whole and especially those who have asked, "What about top drive filling?" Incidentally, mill men ask me this question several times a week.

In the beginning, the only thing the firm which I represented had to go on was the experience gained through the medium of top drive warp spinning, a tried and proved method which, in my opinion, is one of the finest improvements in the field of spinning in a great many years.

We had had some successful experience with a wooden warp bobbin and a line contact. That is to say, a line fit at the top of the spindle of about 1/16″ (Fig. 1a). Therefore, it was decided to incorporate the same principle in the relationship of a top drive quill to the filling spindle.

FIG. 1A



Our first filling spindle modifiers were made with the diameter of 0.349″ to 0.351″ with a 0.150″ taper at the top. This proved very satisfactory with the line fit and spindle speeds up to about 10,000 rpm.

The mill found that the bobbin could be positioned on the spindle so as to backwind on the acorn. This decreased the number of ends down at the start up considerably and of course made the doffers very happy.

It also left the end free for the battery filler and increased her efficiency in the weave room to a marked degree. It allowed the bobbins to seat on the spindles more uniformly, making more uniform packages and consequently getting maximum amounts of yarn on each bobbin. In addition, it was felt that the top drive principle effected a faster spindle speed due to better running qualities.

The modifier was short-lived however, due to construction problems and to the fact that the industry, with the proved anti-friction warp spindle tucked safely under its belt, was now ready to go to an anti-friction filling spindle.

One other thing I might mention here is that it was discovered that the tool marks left at the bearing portion of the spindle would have to be removed by a finishing polish to eliminate the problem of the bobbin threading itself at the bearing point and becoming almost impossible to doff.

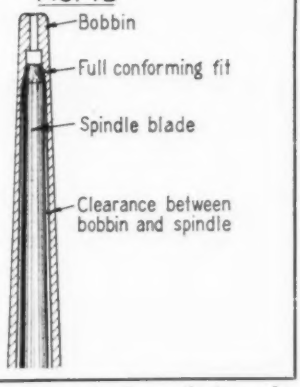
I am compelled to point out that at this stage it was felt that top drive filling had many possibilities, and that it would be beneficial to the industry as a whole if a meeting could be held between all the spindle manufacturers in a concerted effort to expedite the solving of the various problems and to come up possibly with a standard spindle which would be good for all concerned.

Unfortunately, this idea was not readily accepted, but two firms did get together on some ideas.

As aforementioned, the modifier idea was short-lived. It was not long after this that I became associated with another firm which continued with the idea of the line fit on their spindle. However, we were now dealing with an anti-friction spindle, and mill men began to see the possibility of spindle speeds from 11,000 to 12,000 rpm on the horizon. This presented a new set of circumstances.

About this time, other spindle manufacturers had also entered the field of manufacturing top drive filling spindles. Some of them favored a full conforming fit as opposed to a line fit (Fig. 1b). Both factions began to have their problems.

FIG. 1B



The line fitters at spindle speeds of 11,500 began having bobbins ride up and lose a steady contact with the spindle. Some would rise so slightly that the rise was not visible to the unaided eye. This steady vibration actually caused the wood bobbin to wear the top of the spindle completely even though the spindle was 59 to 61 hard Rockwell "C" scale.

On the other hand, the exponents of full conforming were having extreme difficulties doffing their bobbins—some would stick to the point that doffers would break the doffer guards in trying to remove the bobbins.

At this point the old problem of bobbin versus spindle reared its ugly head. In my opinion, the top drive filling principle had grown

*R. Michael Turner of R. Michael Turner Co., Clinton, S. C.

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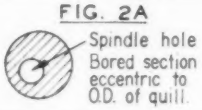
like Topsy, and up until this time everything from both the bobbin and the spindle standpoint had been done hurriedly by trial and error.

At our bobbin shop we attempted to ream old bobbins for the new top drive principle, some for line fit and some for conforming fit. These bobbins could not be made to run consistently good on the spindle, a fact which presented a constant mystery.

The bobbins were tested on the acorn spindles and crooked ones thrown out. Then they were reamed; and when tested again on top drive spindles, they would run crooked. Several different methods of reaming were tried, but to no avail.

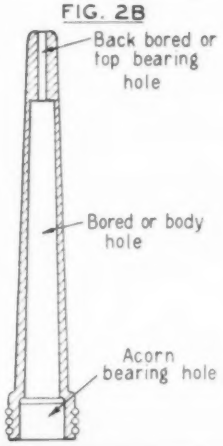
Just when it seemed an impossibility, someone cut a bobbin in cross section and found that the bored hole was not concentric to the outer circumference of the bobbin barrel (Fig. 2a).

FIG. 2A



A longitudinal cross section of a quill shows the three holes to be considered in fitting a standard acorn spindle: namely, the acorn hole, the bored hole, and the back-bored or bearing hole (Fig. 2b).

FIG. 2B



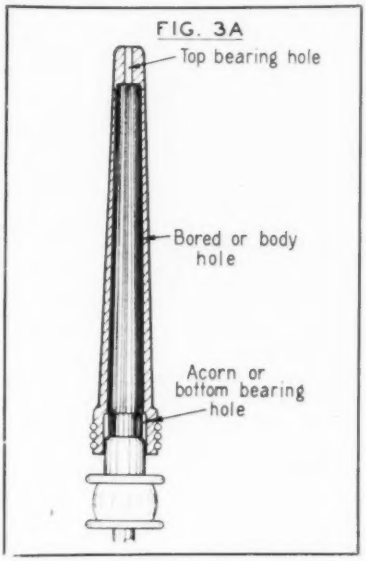
In fitting a standard acorn spindle, it is mandatory that the top bearing hole and the acorn hole be in perfect alignment. The bored hole is not critical.

On the other hand, in fitting a top drive spindle, the bored hole becomes very critical. It must be in perfect alignment because this hole controls the clearance between the bobbin and the spindle.

It is even more critical in reamming bobbins in that this hole guides the reaming bit to the top bearing hole. Therefore, it is impossible to reream a bobbin for top drive when this hole is off center.

To combat this, the bobbin shop ground a special spindle blade to be used in testing the old quills, the blade to fit only the bored hole and not touch either the acorn or bearing hole (Fig. 3a).

FIG. 3A



This spindle was then used to test old quills prior to reaming them for top drive. The result was that from 35 per cent to 40 per cent of all old quills were culled out prior to reaming, due to a bored hole that was off center. The 60-odd per cent returned to the mill would be as near true-running as possible.

Let me point out here that while a rereamed quill inspected in this manner can do a very good job for less money spent, it can never do as good a job as a new quill.

I personally believe that bringing this off-center hole to the attention of the industry helped the bobbin manufacturer to make a better new top drive filling quill.

When the line fitters and conforming fitters got well into their respective problems, they began to see that top drive filling was a different animal and the transition would not be as easily made as it was in top drive warp spinning.

In experimenting, the line fitters went more toward conforming, and vice versa. Over a period of several months, it finally began to look as if the solution lay somewhere between the two.

It now appears that a conforming fit of 3/32″ to 1/8″ is very near the answer. Some mills are running this with spindle speeds of 11,000 to 11,500 with no marked problems of either sticking or rising bobbins.

I believe that for spinning filling directly, top drive is here to stay. The problem is one of compatability between the bobbin and the spindle. Manufacturers of new bobbins can not and will not guarantee that a wood bobbin will remain straight and true even after a very short period of time.

The throwing industry went through the same problems in the early stage of antifriction spindles. They had been running a half-pound gross load on a conventional base and bolster spindle at speeds of 9,000 to 10,000 rpm.

With the advent of antifriction spindles, they figured that a gross load of one pound could be run faster. As the speeds were increased, spindle bearings wore rapidly. It was quickly determined that if a spindle is to be run at higher speeds and greater loads, the bobbin also must be in and stay in as near perfect balance as possible.

The bobbin manufacturers are now doing this, and some of the mills have installed expensive balancing equipment to insure that the bobbins stay in balance. As a result, throwing spindles are now being run as high as 15,000 or 16,000 rpm with gross loads up to two pounds.

One day perhaps someone will make a filling quill for a top drive spindle which will be perfectly true and remain impervious to warping, splitting, "egging," etc.

With such a quill, it is my opinion that spindle speeds up to 15,000 rpm, or (if the traveler and related problems are overcome) perhaps even higher speeds, will become a reality.

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The Saco-Lowell Speed-Tex ring offers the shortest breaking-in period of any known ring. It retains all outstanding Pawtucket qualities — ultra-smooth finish, close tolerances, long life.

The final finish of the Saco-Lowell Speed-Tex ring is obtained at low temperatures which do not soften the initial case hardness of the basic steel ring. A softer ring would break in satisfactorily, but would have a short life.

Actual mill tests show only 4 or 5 traveler changes are required for complete breaking in, compared to 50 to 100 traveler changes for conventional style rings. The Saco-Lowell Speed-Tex will give consistently, ring after ring, high traveler speeds, the longest life, and the shortest breaking-in period of any ring available today.

TYPICAL INSTALLATION

Yarn, Warp—20.5's
Ring Size—3" Diameter
Spindle Speed—9,000 RPM
Traveler Speed—7,069 FPM
Traveler—Victor No. 2/0-X2D-191 HRW

Traveler changes during breaking-in period:

No. 1— 1 hour
No. 2— 20 hours
No. 3— 48 hours
No. 4— 96 hours
No. 5—120 hours

SACO-LOWELL Speed-Tex MODEL 01C

Higher Traveler Speeds Than Ever Before!

This exclusive Saco-Lowell ring reaches a new high in large package spinning speeds. Special flange contours permit traveler speeds never before attained. The inner flange, bearing surface of the traveler, is full width to provide a wide, steady traveler path. The outer flange, not a true bearing surface, has been sharply reduced in width.

A wider traveler may be used without changing its total weight. The increased width results in better traveler balance, more stable operation and superior running conditions. More bearing area and uniform pressure reduces traveler wear.

The Model 01C Speed-Tex has all of the advantages of other Speed-Tex rings — the shortest and most economical breaking-in period of any ring available.

COMPARATIVE MILL INSTALLATION DATA

Mill A — 25's Warp Yarn — Frame—SG-3D Gwaltney	
Model 01C Speed-Tex	Conventional Ring
Ring Size—2½" Diameter Spindle Speed—11,500 RPM Front Roll Speed—154 RPM Traveler Speed—7,500 FPM Traveler—Victor No. 4/0-X3D-89-HRW	Ring Size—2½" Diameter Spindle Speed—10,200 RPM Front Roll Speed—136 RPM Traveler Speed—6,700 FPM
Mill B — 24.75's Warp Yarn — Frame—SG-3D Gwaltney	
Model 01C Speed-Tex	Conventional Ring
Ring Size—2½" Diameter Spindle Speed—11,500 RPM Front Roll Speed—168 RPM Traveler Speed—7,500 FPM Traveler—Victor No. 3/0-X3D-89-HRW Break-in Schedule: No. 1—30 minutes No. 2—24 hours No. 3—48 hours No. 4—72 hours No. 5—96 hours Traveler Life—96 hours	Ring Size—2½" Diameter Spindle Speed—10,600 RPM Front Roll Speed—156 RPM Traveler Speed—6,950 FPM

*Patent applied for

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HOW OTHER MEN MANAGE

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• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Differing viewpoints—twist variation study challenged, defended

THE EDITORS:

I should like to add my comments to the subject "A Study of Twist Variations," submitted by CONTRIBUTOR No. 9085. There are several causes for variations in twist, and among them are (1) uneven yarn and (2) too-soft twist.

Uneven yarn may be caused by one or more of the following conditions:

Draft too long
Draft too short
Mixed rovings
Shaky roving creels
Roving twisted too hard
Roving insufficiently twisted
Dull-pointed skewers
Plugged roving trumpets
Over-worn steel roll necks
Roving running single with double roving in creel
Roving traverse not working
Steel rolls bent
Top rolls poorly covered
Travelers too heavy
Roving trumpets too small

Too-soft twist may be traced to one or more of these:

Bent spindles
Spindles insufficiently oiled
Broken spindle bolsters
Slack bands (if band driven)

On tape-driven spindles when the idler pulleys have an accumulation of waste between idler and holder, the result is a variation in spindle speeds—and a variation in twist

Also, on tape drive, when idler pulleys, idler chains, or the rods become dirty and oily the pulley does not move freely and less tension is applied to the tape, resulting in lower spindle speed and fewer turns per inch

Poorly fitted bobbins
Bands of various diameters—bands too large for whorls give soft twist; too-small bands, too much twist
Dirty or oily bands
Mixed whorls

Are the roving wraps per inch uniform? With the extreme variations mentioned there is something radically wrong. In addition to the above possible causes I should add that the one-inch method of twist testing is not a good basis for a decision.

Testing the twist on 90s yarn is a ticklish problem, and I would at least attempt to use five inches of yarn between the clamps of the twist counter. If double roving is being run the testing can be simplified by running two roving ends of different colors to aid in determining when the twist has been entirely run out.

Also, I would do my checking with yarn from a particular frame.

WIN $100 NEW KINK CONTEST STARTS THIS MONTH WIN $100

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance, and the $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, December 15, 1958.

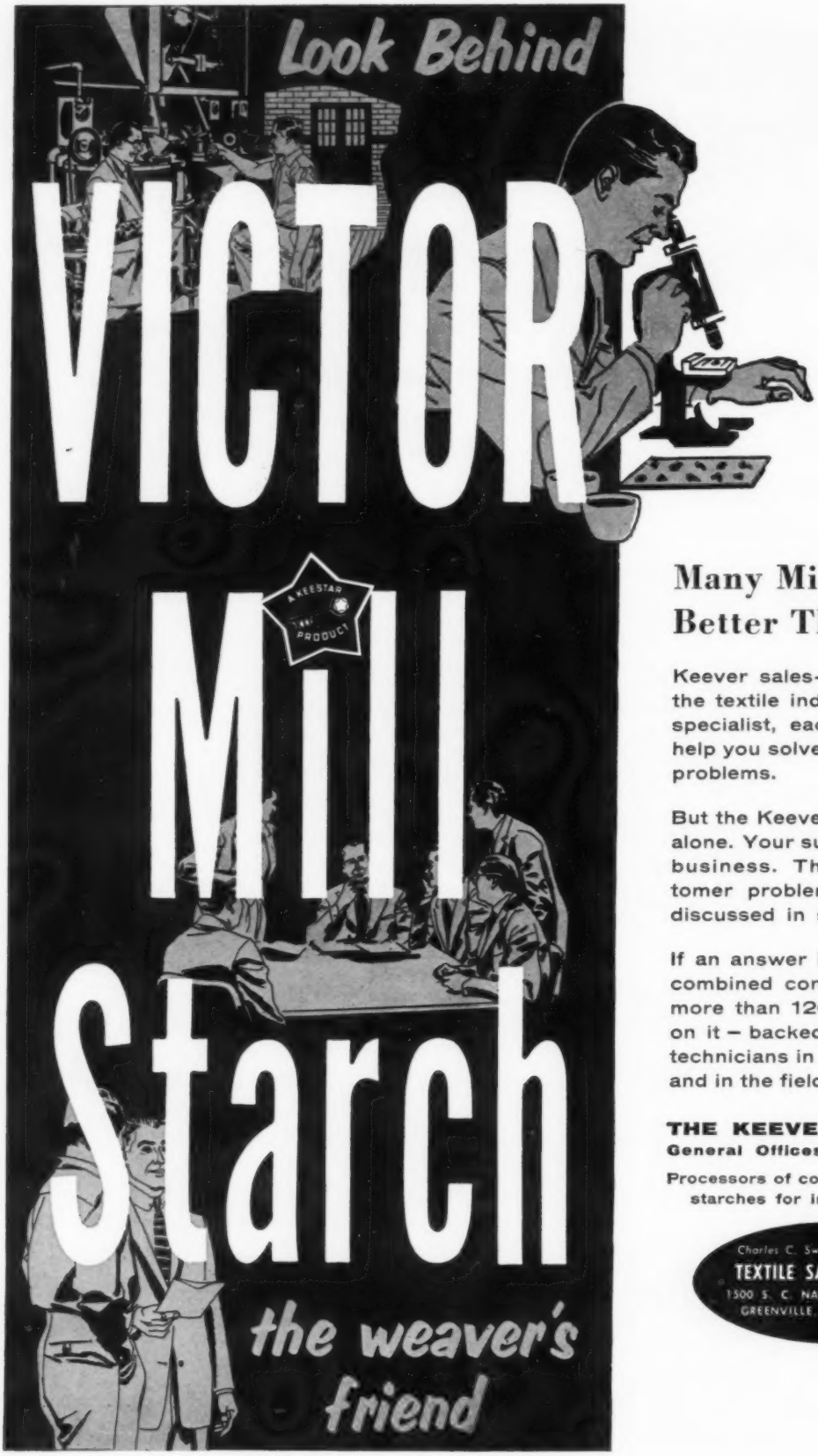
► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.

Contest closes December 15, 1958. Don't wait. Send your entry now!



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If I got no extreme variations on this frame, then I would look for [expect] the same conditions on all frames.

His final analysis is based on twenty bobbins with variations as mentioned. I am reproducing for study part of his tables, giving results on a per-bobbin basis:

Bobbin No.	Average T.P.I.
1	23.10
2	25.20
3	27.80
4	28.90
5	34.20
6	32.00
7	26.90
8	31.60
9	32.20
10	30.20
11	27.50
12	29.80
13	33.00
14	31.00
15	29.30
16	30.10
17	25.50
18	29.00
19	31.90
20	32.00
Low	23.10
High	34.20
Average	29.56
Standard	29.50

(These figures are obtained by averaging the turns per inch as they appear across the columns of Table 1. The writer assumed that 20 bobbins were used in the test and that the twist of each bobbin was tested with yarn pulled from the top of the package as the package was one-quarter exhausted, one-half exhausted, etc. Actually, only one bobbin was used with 20 tests being made at each of the points in question. In effect, CONTRIBUTOR NO. *9085 made the tests approximate the average twist in a 20-inch length of yarn by carefully testing 20 adjacent one-inch yarn sections. He explained this in the original article.—The Editors)*

The average ties in closely enough to the standard to be perfect in so far as twists are concerned. The variations do not.

I would select a certain frame and test the first twenty spindles from it, provided it were equipped with band drive. If it were tape driven I would check every other spindle until I checked twenty. Then, with the front roll speed and the speed of each spindle I checked, I would calculate the turns per inch by the following formula:

$$\frac{\text{spindle speed}}{\text{front roll rpm} \times \text{circumference (in.)}} = \text{turns per inch}$$

With this formula the turns per inch for a spindle speed of 7290 rpm, and a one-inch front roll speed of 80 rpm, equals slightly more than 29.00.

Assuming the twist constant to be 1092, and the twist gear to be of 37 teeth, the twist equals 29.51 T.P.I. If these calculations agreed within a half-turn, I would assume that the twist counter would reflect the same agreement. In case of failure there I would begin to check the list of causes mentioned earlier in this discussion.

We must not forget that in the case of ring-spun yarn twist is being inserted to one extent at the nose of the bobbin and to another degree at the shoulder. This unevenness is inherent in ring-spun yarns. But we should not get 23.10 T.P.I. on one bobbin and 34.20 on another if all factors such as gears and speeds are equal.

CONTRIBUTOR NO. 1041

THE EDITORS:

The reader who discussed my articles on variations of spinning twist (TI for April, 1958, p. 159) must, indeed, be well acquainted with research work. The list of causes he cites for uneven yarn, and the causes for yarns that are too soft, shows he is well informed on the reasons for the conditions cited. I shall be pleased to go over some of the items he points out.

He suggests that something is radically wrong with the extreme variations shown in the results of the testings. These figures were also questioned by one of the executives in the mill where I made the tests. However, a demonstration soon convinced him that such wide variations do exist when taken on a one-inch length.

However, if the twists had been on a five-inch basis the variations would have been much less. For instance, if the twists in the column under the heading "Bottom" (which had the greatest spread of results) are arranged in groups of five and averaged, the following figures for the 20 tests are obtained: 28.30, 31.00, 25.20, 30.40.

Hence the variation is 25.20 to 31.00, which is quite a change from 19 to 44. In other words, the percentage of variation for the 5-inch length is 20.19; while for the original 20 single trials the percentage of variation is 87.02. Going a step further and taking the results of 2 sets of 10 trials, i.e., equivalent to a 10-inch length each, the average for the upper 10 trials is 29.65; for the lower 10 trials, 27.80.

For comparison, the difference in percentage of variation is as below:

1″ Length	87.02%
5″ "	20.19 "
10″ "	6.44 "

As for the length of yarn actually taken for the twist test (1″), it may be said that I have used the method, mentioned by the reader, of coloring one of the double roving ends, and I concede that it is a good one. However, the bobbin from which the tests were made was given to the laboratory "as is."

The writer has tried various methods of checking spinning twists—such as for example, untwisting a one-inch length of yarn and then continuing twisting in the opposite direction, obtaining the presumable twist by dividing by two. Also checking both a five-inch and a ten-inch length of yarn, by using a wire finger that rested on the center of the length of yarn. The yarn was untwisted and twisted again until the finger was at its original position. Dividing by two gave the twist for the 10-inch length.

However, on such fine cotton yarns as 90s and up, the result was not altogether satisfactory. Even with a thoroughly experienced worker doing the twist manipula-

tion there was sometimes cause for doubt.

But by using the picks an expert operator could obtain quite reliable results; by testing each length as close to one another as possible, the average of five or ten inches could be readily obtained. Of course there is always an element of error in using a one-inch sample of yarn, but with a practiced technician the error is consistent and the results sufficiently correct for every practical purpose.

The reader writes: "Your final analysis is based on twenty bobbins with variations as mentioned." There is evidently a misunderstanding here! Only *one* bobbin was used for the entire tests, not *twenty* as the reader seems to have concluded. A scrutiny of the heading of Table 1 shows quite clearly that only one bobbin was used. The idea of using only one bobbin was to note the variation in twist from the top to the bottom of the bobbin.

The reader suggests that where variations are greater than he mentions between the formulas he itemizes, he would check conditions as given in his resume of causes.

Theoretically, and for research investigation, this procedure would be quite all right. But in actual practice where there are thousands of spinning spindles in operation, it would be a task of tremendous magnitude, and of great cost, to endeavor to get at all the original causes of the variations in twist. In this mill everything possible was done to keep the machinery at its best.

Moreover, as the spinning yarn was finished as a multi-ply thread, the inequalities of twist and unevenness were considerably offset after being combined in the finished product.

CONTRIBUTOR No. 9085

TABLE 1

Twist Tests at Five Different Places Along the Traverse of a Seven-Inch Spinning Bobbin

90s Cotton Yarn

Top of bobbin	¼ down	½ down	¾ down	Bottom
21.00	26.00	22.50	23.00	23.00
27.00	27.00	20.00	29.00	23.00
22.00	33.50	35.00	20.00	28.50
25.00	30.00	21.00	37.50	31.00
35.00	32.00	33.00	35.00	36.00
35.00	27.00	29.00	25.00	44.00
23.50	32.00	27.00	29.00	23.00
41.00	29.00	25.00	22.00	41.00
30.00	30.50	41.00	37.50	22.00
35.50	31.00	31.00	28.50	25.00
30.00	35.00	19.00	31.00	22.50
27.00	31.00	25.00	41.00	25.00
40.50	27.50	27.00	40.00	30.00
32.00	34.00	35.00	29.00	25.00
33.00	20.00	35.00	35.00	23.50
25.00	37.00	34.00	23.00	31.50
31.00	24.50	27.50	25.50	19.00
21.00	34.50	28.00	20.00	41.50
42.50	27.00	35.00	29.00	26.00
26.50	33.00	41.50	25.00	34.00
Average 30.18	30.08	29.58	29.25	28.73
Range 21.00	20.00	19.00	20.00	19.00
42.50	37.00	41.50	41.00	44.00

Standard turns per inch: 29.50

This table is taken from the original article and shows the manner in which the author arranged his test data. He made twenty tests at the top of the bobbin, twenty from a point one-fourth down the bobbin, etc. Only one package was used for the entire series.

Minimizes broken spinning rolls

THE EDITORS:

On older type spinning frames the common practice among manufacturers was to make the middle and back steel rolls with a ⅞″ boss and a 0.650″ neck, while making the front steel roll with a 1″ boss and a 0.750″ neck. After years of use, and with the increased weight applied to the top rolls today, the steel rolls with the 0.650″ necks sometimes twist in two. This happens most frequently at the first neck, at the gear end of the frame. When we have these broken necks repaired, we have the stand milled to 0.750″ and the roll renecked to 0.750″. This virtually eliminates broken middle and back steel rolls.

CONTRIBUTOR No. 1035

Quick way to determine how much yarn is on a package

THE EDITORS:

I have designed this nomogram to be used as a quick way of finding the yards of yarn on a cheese. We find it very useful in our spooler room where our fixers often need to know the quantity of yarn left on a package. They now weigh the packages and look to the chart for the answer in yards. The nomogram is based on cotton counts and on the net weight of the packages being available.

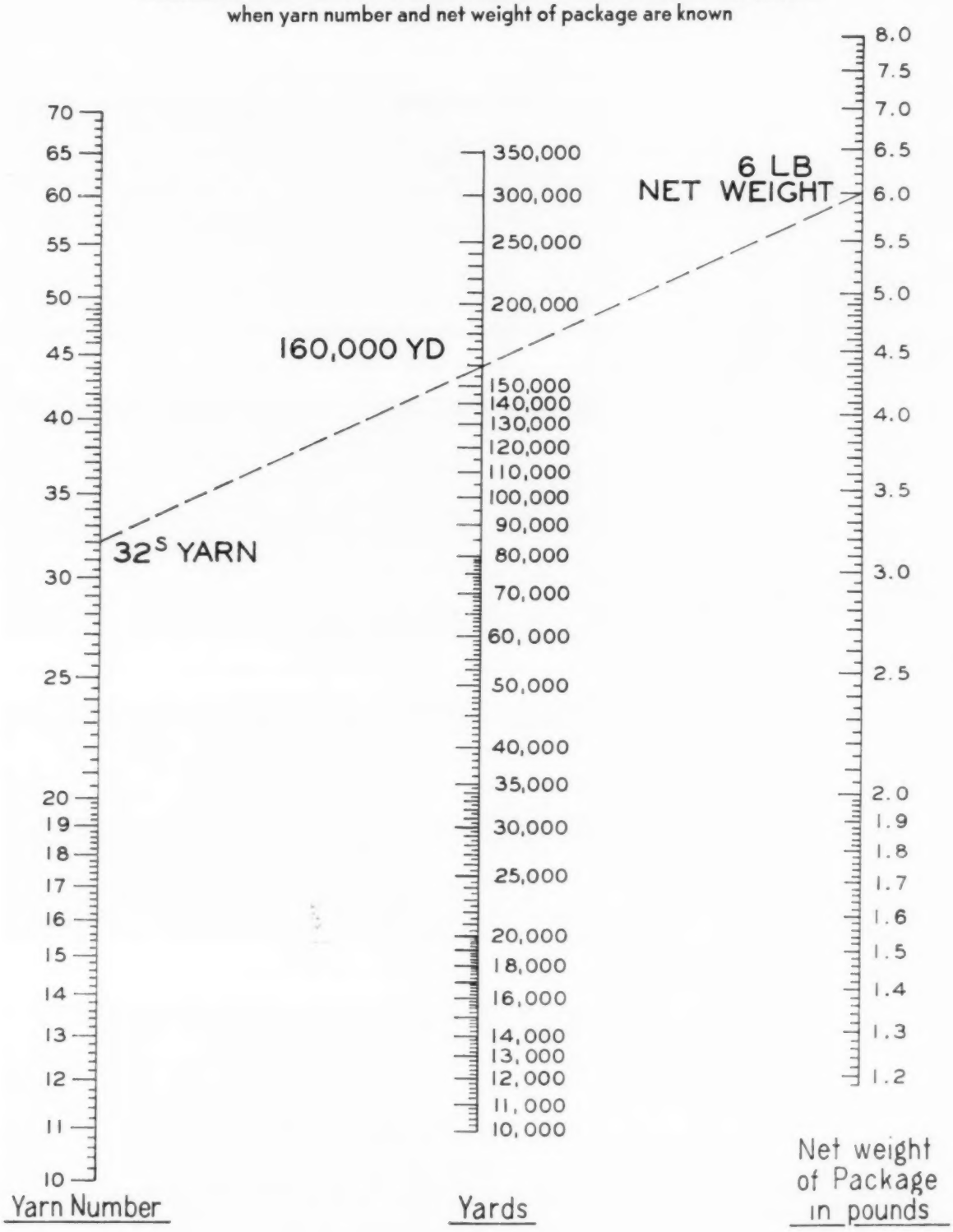
Only a straight edge is needed for taking a reading. By lining the yarn number of the package with the net weight on the third scale, the yardage can be read on the middle scale where the straight edge crosses it. Readings must be made with care, of course.

The mathematical theory used in designing such scales came from pp. 50-53 of the book *Graphical Solutions* written by Charles O. Mackey. In plotting it I used logarithmic scales designed by Joseph Lipka.

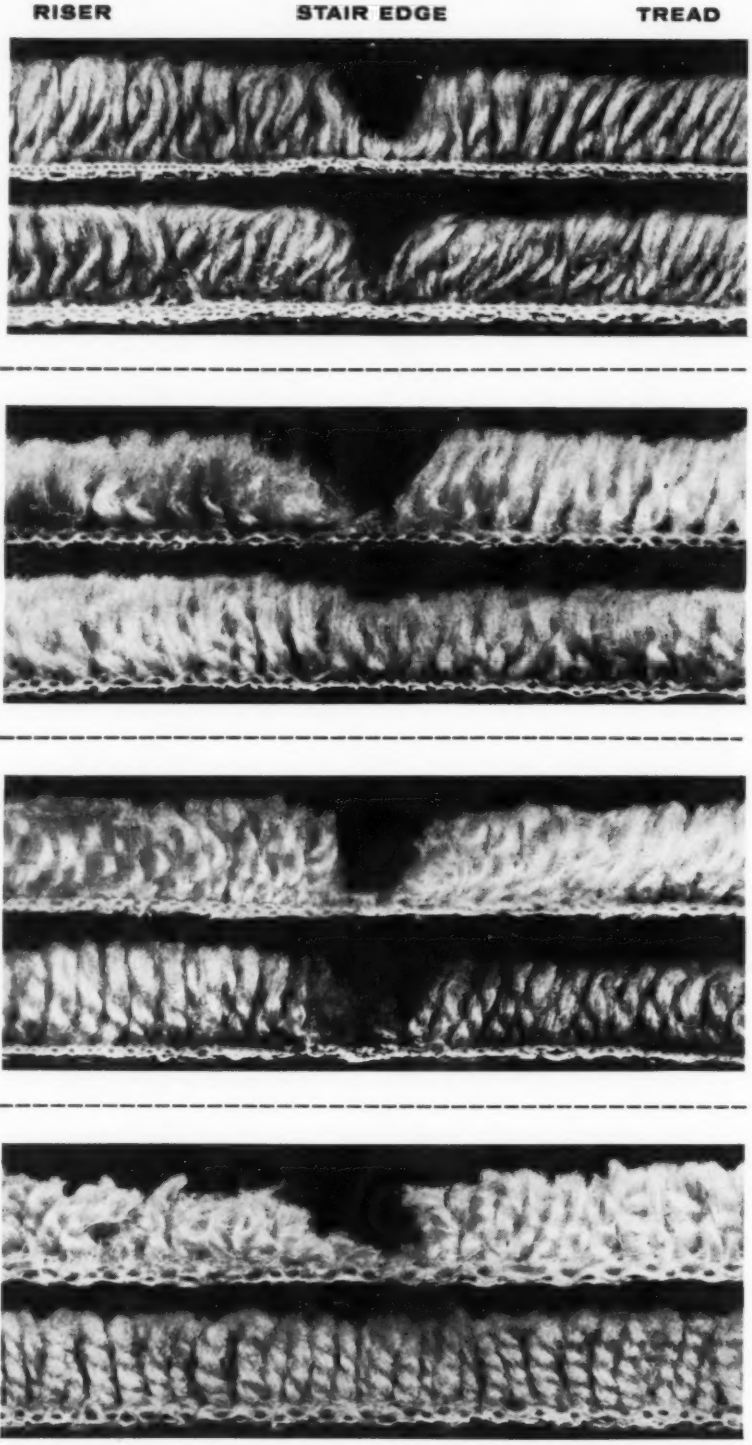
CONTRIBUTOR No. 1044

NOMOGRAM FOR FINDING YARDS OF YARN ON A PACKAGE

when yarn number and net weight of package are known



You can add years of wear



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Check list for punched card machine users

The Editors:

With the continued increase of punched card accounting machine installations in textiles it is essential that some thought be given to the housekeeping in those departments housing the equipment. Good housekeeping is a major concern of machine room management, for, beyond providing the satisfaction of neat appearance, it is vitally important in maintaining high morale and peak efficiency in an installation.

Here is a handy checklist of important housekeeping factors, presented to help in the training of personnel and to help the supervisor score his own department.

Is definite filing, storage, and work space provided for:

Cards	Yes— No—
Forms	Yes— No—
Form feeds	Yes— No—
Platens	Yes— No—
Procedure manuals	Yes— No—
Test decks	Yes— No—
Control Panels	Yes— No—
Tapes	Yes— No—
Wires	Yes— No—

Are all these items filed or stored immediately after completion of job? Yes— No—

Are machine covers kept in place? Yes— No—

Are the tops of machines clear of unnecessary materials? Yes— No—

Are processed source documents and finished results dispatched promptly? Yes— No—

Are manually wired control panels clearly identified while in use and promptly torn down after use? Yes— No—

Have you appointed someone to be responsible for good housekeeping practices? Yes— No—

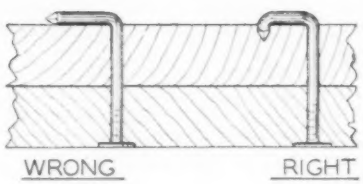
CONTRIBUTOR NO. 1019

Bury points of clinched nails in wood

THE EDITORS:

When nails are used in yarn boxes, work benches, and in other places, it is often necessary to bend the projecting ends. If the point of the nail is not clinched securely, it may straighten under strain or become a safety hazard.

Using a nail punch, screwdriver, or similar object, bend the projecting part of the nail over, forming a sort of hook near the end of the nail. Then drive the nail tip into the wood as is shown in the accompanying illustration.



CONTRIBUTOR NO. 1051

More aid for the weaver whose shuttles won't thread

The Question Briefed. *On page 155 of the April, 1958, issue of this magazine* CONTRIBUTOR NO. 9089 *asked for advice in getting his heavy filling yarns to thread as the looms transferred. Several replies have been published. Here is another, and others are invited.*

THE EDITORS:

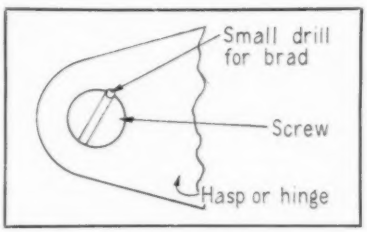
This is an offer to help CONTRIBUTOR NO. 9089 who asked for aid in reducing filling breaks. As I hold a patent on a filling guide and tensioning device applicable to the shuttle eye, I shall be glad to set up for him one of the shuttle eyes he is now using. Of course, along with the eye, I shall need to know the filling count the eye is to use. I am certain the condition can be eliminated.

CONTRIBUTOR NO. 1033

Keeps wood screws tight

THE EDITORS:

If vibration is removing screws from hinges and hasps, the screws may be locked in place with small nails or brads.



File a notch at one side of the screwdriver slot in the screw head. When the screw has been tightened, drive the nail or brad through the notch and into the wood.

CONTRIBUTOR NO. 1053

Trumpets on lap winders

THE EDITORS:

By placing roving frame trumpets on the sliver guides of the lap winder, we eliminated all knots, tangles, and lumps from the finished lap. The approach will decrease efficiency slightly, but the improved quality of the lap more than compensates for the extra trouble. The system works much more effectively than do lifting rolls. Trumpets can be installed in only a few minutes and at very little cost.

CONTRIBUTOR NO. 1037

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Cost Disadvantage	$ 0	$1.255	$ .510

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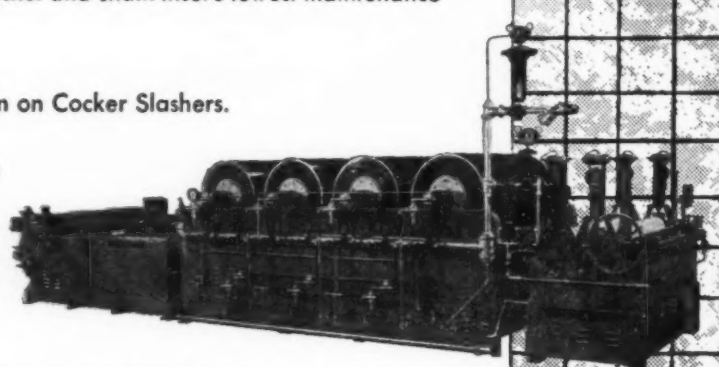

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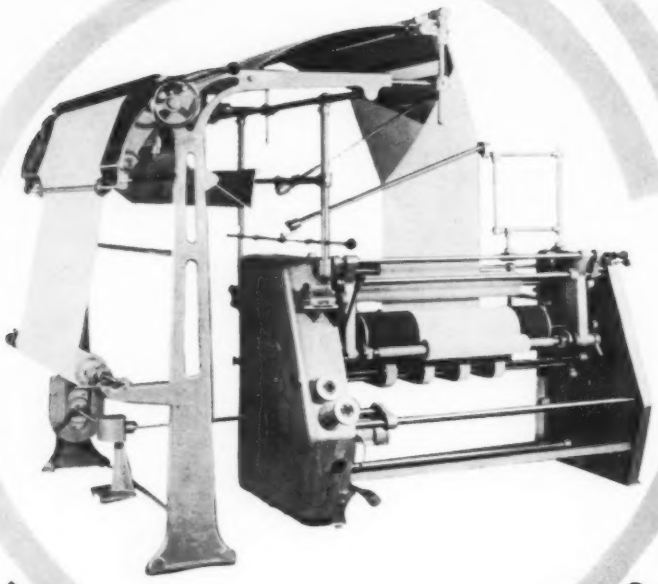

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- Machine gives unmatched performance and accuracy even at high speeds.
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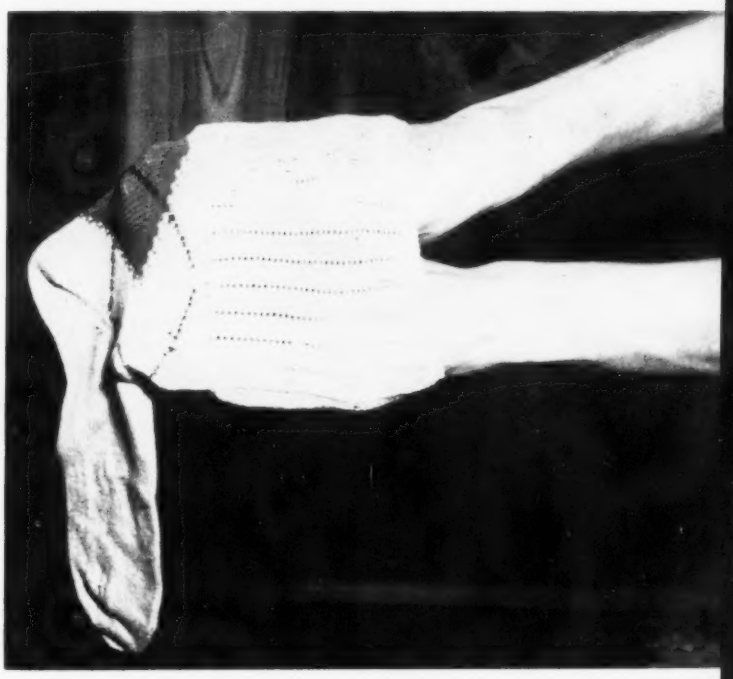


Here's how to make it on Banner SCP and SCOP machines

by Winston Shewmake
Exclusive

MEN'S SOCKS with elastic tops that stretch more and bind the leg less are now being produced on a variety of knitting machines, and men are buying a substantial quantity of them.

This buying trend is encouraging to hosiery manufacturers, and it is not surprising in that it was the consumer who instigated efforts to develop this type of top in the first place. Continued complaints such as, "Elastic tops are too tight," "They bind," "They cut off circulation," "They leave marks on my legs," and "I can't pull the top over my heel without it tearing" brought forth the present trend.

Manufacturers of the "Bobby" type girls' socks were the first to capitalize on this more-stretch method, and for some time they have enjoyed good sales in this line. However, the adaptability of men's seamless machines to this method of knitting less-binding tops was not perfected until recently.

Now that it has been proved on machines of the solid-color design and others, various means of making a less-binding and more-stretchable top have emerged in several mills with good results, both in manufacture and in sales.

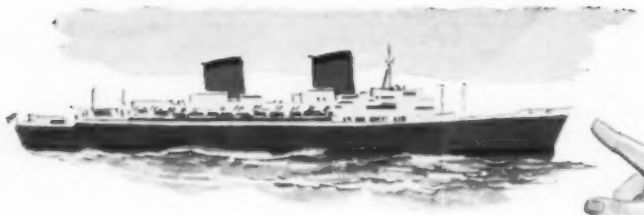
Probably the most popular type of non-binding top is that of the "Morpul" (patented) construction in which the knitting yarns knit longer, looser stitches by means of running over the top of flattened sinkers. This type of top is generally made on a 3x0x3 or 2x2x2 or 3x0x1x0x3 arrangement of needle selectivity during the run of the top. Usually the top is made by selecting every other needle into knitting position to take on elastic yarn.

Sinkers with flat tops, or noses, are required to draw the longer stitch on most of the new non-binding top adaptations. Some have tried with disappointing results to drop the knitting level of the needles in the top. This will give only a slightly longer stitch, and the result is merely a simulated ribbed effect.

It is generally concluded by producers of stretchable tops that the yarns must be positioned on top of the sinkers.

How to Knit Yarns on Top of Sinkers. There are several ways to knit yarns over or on top of sinkers. On the solid color pattern and solid color pattern overplaid knitting machines they are:

- 1. Advance the right rear sinker end cam by advancing the entire sinker cap by means of an independent linkage to a cam race on the main drum. This linkage may be made of rigid levers or of a cable connection, whichever is more convenient. It is actuated approximately after four rounds of top elastic yarn have been knitted. This will result in the top knitting yarns leaving the throat of the sinkers and positioning themselves on top of the flat sinkers that have already been placed in the sinker head. The linkage is relieved for normal operation after the top has been knitted.
- 2. Reverse the sinker cap by 180 degrees, thereby placing the sliding auxiliary sinker cam on the right side of the machine under the right mouthpiece. The bumper screws then work against a metal or fiber cube which has been placed over the hole that normally holds the carrier or latch ring handle. Movement of the sliding sinker cam is then controlled by an independent linkage as described with similar results of the yarns in



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SPECIALIZATION

Yarn dyeing is our specialty. We don't dye to make yarn sales. Our 5 plants and our entire organization have but one objective — to provide the best yarn dyeing service available.

CAPACITY

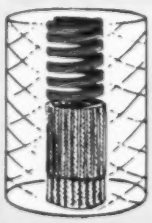
With 5 dye plants, hundreds of package dyeing machines in dozens of sizes and winding equipment to match, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity.

CONSULTATION

We can help you with your color problems. We have unequalled experience in time, variety and volume — all at your service.

AVAILABILITY

Our 5 yarn dyeing plants, strategically located in 5 different textile centers, are conveniently yours. Contact our nearest plant or office.



X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

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Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

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*Trademark for Dupont's acrylic fibre
**Trademark for Dupont's polyester fibre

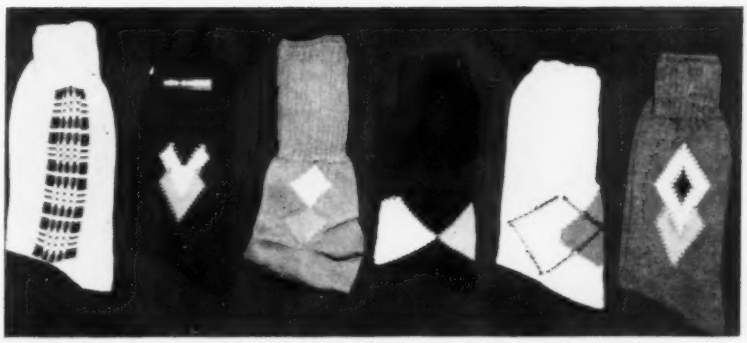
relationship to the sinkers.

● 3. Install a movable right rear sinker end cam. The motion of this cam inward positions the yarns onto the top of the sinkers. Motion of this cam is controlled by linkage similar to that of the main drum as described, and the results are similar. Relieve the end cam for normal operation after the top has been knitted.

Any one of these three methods can produce a top which has considerably more stretch range than the conventional elastic top.

Another pleasing aspect of this type of top, other than the variations of needle selectivity, is the various lengths of tops which can easily be made.

The needle selectivity facilitates various rib effects, the longer stitches increase its stretch range, the extra body adds a look of expensiveness, fewer elastic courses per inch lower elastic yarn cost, and a true horizontal elastic lay-in assures better "stay-up" characteristics.



While each of the six pairs of socks pictured here is of a different pattern, all have tops that stretch more and thus provide more comfort for the wearer. Note the "Non-Binding" label on the top of the second pair from the left.

A five-and-one-half-inch-long top, as well as several other widths and lengths, has been going very well in our plant, and we are encouraged with this factor in that it reduces the amount of additional designing usually required in the sock leg.

Consumers of men's hose have wanted a better top for a long time. Now, with these production methods available, all that the manufacturer has to do is make and sell them to a waiting market.

How to bleach Orlon-cotton knit fabrics

■ TWO COMMERCIAL processes have been developed for bleaching fabrics knitted from yarns which are blends of "Orlon" and cotton, according to information recently published by Du Pont. They are a formic acid bleach and sodium chlorite bleach.

With either of the methods, machines and other equipment which the wet goods contact should be of stainless steel, preferably type 316 or type 304.

Formic Acid Bleach. The following procedure is recommended for a blend containing 80% Orlon with 20% cotton:

For processing in a beck, circular knit fabric should be sewn around its circumference to form a continuous tube.

Scour fabric for 20 to 30 minutes at 160 F in a bath containing 1% "Duponol" RA surface active agent (Du Pont) and 1% tetrasodium pyrophosphate, based on the weight of the material.

Next, remove motes and bleach cotton by treating fabric for one hour at 160 F in a bath containing 5.0 grams/liter "Albone" 35 hydrogen peroxide (Du Pont) and 5.0 grams/liter sodium silicate 40° Baumé (pH 9.5 - 10.0).

After the peroxide treatment, rinse the fabric and then whiten the Orlon by treating goods for 1¼ hours at the boil in a bath containing 3% formic acid (90%), 2% "Duponol" RA, 10% Glauber's salt (calcined), 0.6% "Tinopal" ANA (Geigy), 0.4% "Uvitex" A (Ciba), and 0.003% "Latyl" Blue RB (Du Pont).

Cool fabric *slowly* and rinse.

Sodium Chlorite Bleach. Acidified sodium chlorite ("Textone" by Mathieson) can be used in a one-bath procedure to bleach both fibers in an 80/20 blend of Orlon/cotton.

Sew circular knit fabric around its circumference to form a continuous tube and scour in a beck by the procedure recommended for the formic acid bleach method.

Rinse fabric and then bleach it for one hour at 190 F in a bath containing 1.5 grams/liter sodium chlorite and 0.5 grams/liter nitric acid (61%).

Then cool the fabric *slowly*, rinse it thoroughly, and scour to remove traces of residual acid.

Finishing. Any lengthwise stretch imparted during beck processing must be relaxed during finishing to insure a stable fabric. The fabric cannot be stabilized wider than the relaxed width of the cloth. Knit fabric of 80/20 Orlon/cotton has excellent dimensional stability after it is finished under relaxed conditions.

The following finishing steps are suggested:

1. Apply a finish as desired by padding or by exhaustion from a bath.

2. If the finish is applied by exhaustion, centrifuge the goods (cool) to remove excess finish solution.

3. Optional—Steam the damp fabric on a tensionless calender to remove wrinkles.

4. Dry fabric. Temperature for white goods should not exceed 230 F.

5. Finish goods by steaming on a tensionless calender, using overfeed to eliminate potential lengthwise shrinkage.

New patterns are quickly produced at Huntley. Here a new pattern chain is being installed on one of the body knitting machines.

Keys to successful full-fashioned outerwear making at Huntley Knitting Mills—

Fashion Service Maintenance

Staff prepared Exclusive

HUNTLEY Knitting Mills, Inc., Charlotte, N. C., runs at production capacity on full-fashioned knitted outerwear and men's sport shirts of "Textralized" yarns in both long and short sleeve models. Repeat orders attest to the good job being done at this plant.

Sixteen different colors, and stripes, intarsias, and lace designs are made for outerwear garments. A creative job is done in styling, and ideas from the latest Paris and Italian fashions in dress are interpreted and applied to the products made at Huntley. Keeping abreast of the current market and the latest trends is an important facet in this operation.

A new pattern is taken from yarn to the finished garment in only 36 hours on items of special demand, while normal channels of operation require two to three weeks, according to Baxter Huntley, president of the firm. The sequence includes establishing the measurements of the garment, making chain charts, setting up the full-fashioned machine to knit the body fabric, and setting up ribbers for making waist bands, cuffs, and collars.

Then the garment is assembled (refer to series of photos at bottom of opposite page), starting with looping the first and second shoulders together. Next, the collar and placket are looped; then the sides are seamed. Next comes inspection, trim, lock ends at cuffs and shoulders.

Finishing operations begin with buttonholes; then washing, pressing, heat setting, dyeing, putting on buttons, pressing, final inspection, labeling and packing for shipment.

Special handling keeps batches free of snags and pulls.

A four-dozen sample batch of one size may be the key to the success of a selling program. In one instance a sample from the west coast was received in the plant at 9:00 a.m. The sample was reproduced and shipped before 5:00 p.m. the following day, thereby providing exceptionally fast service in the quest for new business.

Maintenance of Equipment. Full-fashioned machines used for making bodies are 13-section units; sleeve machines have 20 sections.

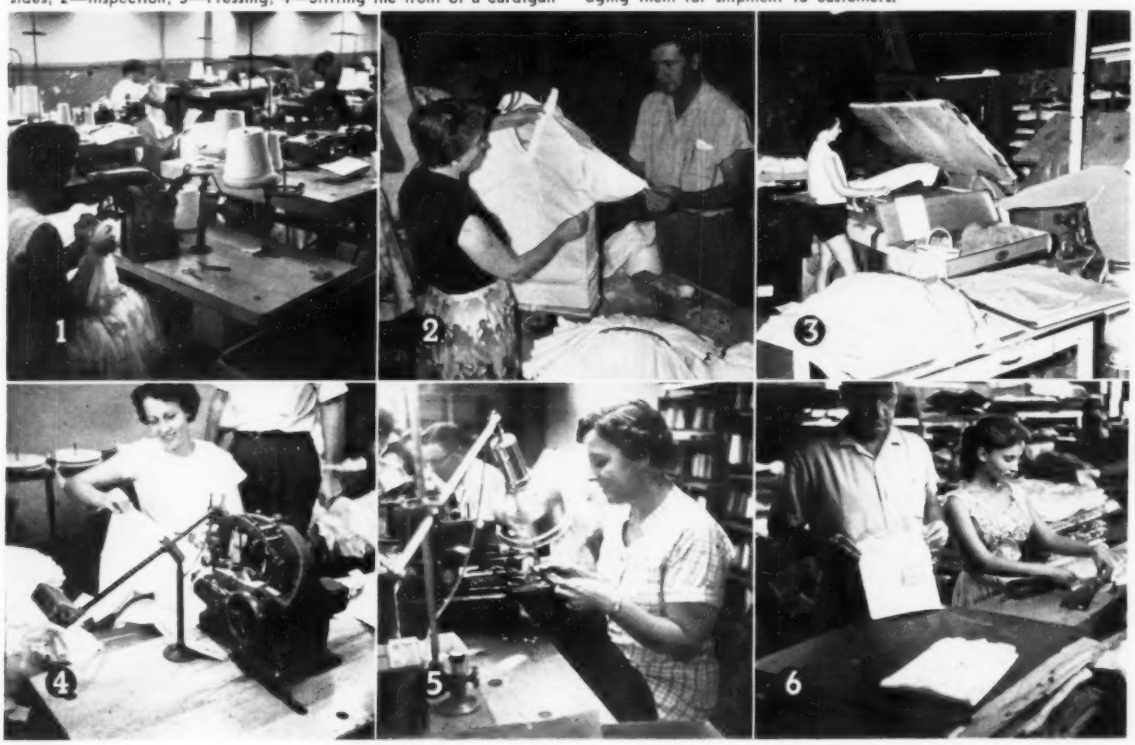
Preventive maintenance is considered a key to trouble-free running. The program followed at Huntley is to analyze possible trouble spots and service regularly before trouble develops.

Three fixers on the day shift and one on each of the other two shifts keep close touch with condition of machines. An oiler makes a complete oiling cycle every 48 hours and keeps sharp vigilance for possible trouble

Oiler makes a complete cycle every 48 hours, carefully lubricating machines. He reports impending trouble to fixer.

Adjustment is made on a V-bed flat knitting machine used for making waist bands, cuffs, and collars for the full-fashioned outerwear.

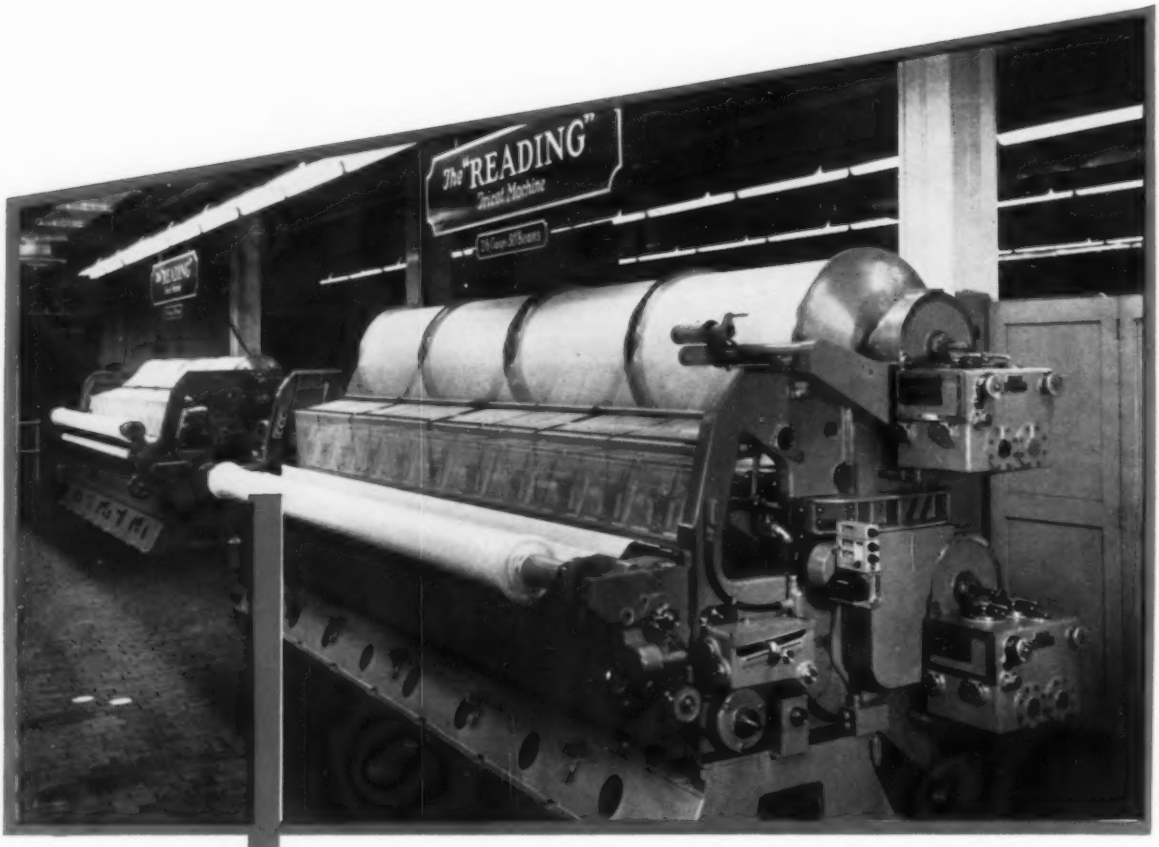
Six of the operations performed in the process of assembling full-fashioned outerwear at Huntley Knitting Mills: 1—Seaming the sides; 2—Inspection; 3—Pressing; 4—Slitting the front of a cardigan and sewing the tape on both sides (machine does all three simultaneously); 5—Sewing on buttons; 6—Labeling garments and packaging them for shipment to customers.



spots. The oiler reports suspicious parts to the fixer.

Integrated Operation. Huntley Knitting Mills comprise three divisions, including a sweater division, hosiery division, and finishing plant which operates under the name of Charlotte Finishing Co. C. P. Flanagan is president of the finishing operation, where both hose and sweaters are finished, stocked, shipped, and billed.

Upon going into production of full-fashioned sweaters, the company found that the great difference compared to full-fashioned nylon hosiery which is also made at Huntley, was in the tremendous amount of detail, styling, and



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strict quality requirements. Although the machines are not as fine in gauge, the necessity to knit so many different pieces on different machines, all for the same garment, require much closer supervision throughout all stages of manufacture, according to Mr. Flanagan.

In the absence of brand promotion, quality is most important, and customers must be satisfied and happy users of the product so they will reorder in the seasons ahead. The strength and growth of the organization rests on building a loyal following upon which to expand, Mr. Flanagan says.

Inspect base twist nylon at the warper

■ THE MOST important single factor in the successful knitting of base twist nylon is the mechanical quality of the yarn on the tricot beam, according to the Du Pont Co. For this reason, many mills use the warping operation as an opportunity to inspect the warp and remove the defects that may become troublesome in knitting, the company said.

In some mills the warper operator inspects the yarn as it is wound onto the tricot beam, by using the arrangement shown in the accompanying illustration.

Observe that a black inspection table five to ten feet long is placed under the yarn sheet near the warper operator, and spotlights overhead illuminate the yarn as it passes over the inspection table at a speed of 100 to 180 yards per minute. When the operator sees a defect in the yarn, he stops the warper and removes it.

Others use electronic equipment for automatically performing this task at warping speeds up to 350 yards per minute.

Following are some additional suggestions given by Du Pont for warping tricot beams of producer twist nylon:

Creels. Use hard ceramic guides. Adjust the distance between the centering eye and the head end of the bobbin for optimum "balloon" characteristics and for minimum contact between the yarn and the head of the bobbin. This distance will vary from 4½" to 7" depending upon the warping speed.

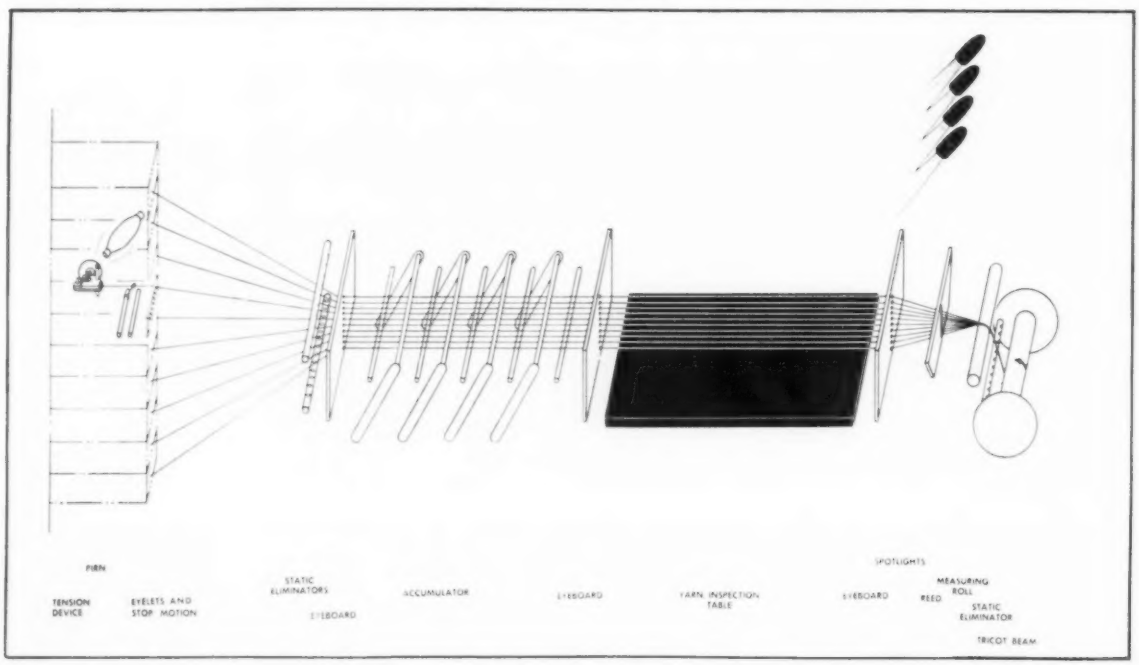
Align all spindles with the centering eye of the tension device. Make certain the spindle holds the bobbin firmly in place.

Place adjacent bobbins far enough apart to prevent interference of the yarn "balloons." This may require staggering of the bobbins in the creel.

Provide sufficient eyelet guide bars to prevent drooping of the ends between the tension device and the front of the creel.

Tension. Tensions must be low, uniform, and carefully controlled, otherwise, knitting efficiency and fabric uniformity will be adversely affected. For best results, tension on the yarn between the front of the creel and the warper should be about 0.10 to 0.15 gpd.

Schematic diagram of a tricot warping operation using the visual inspection system.



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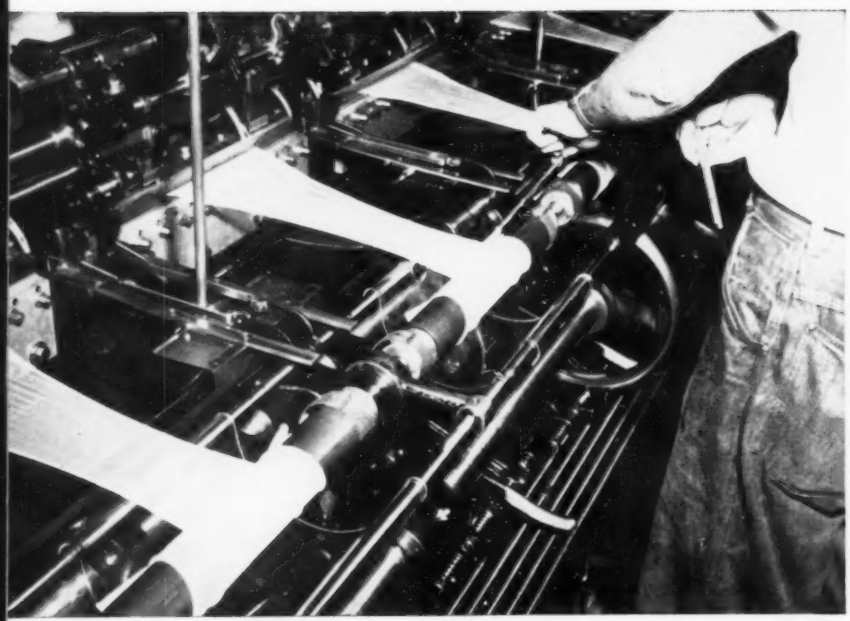
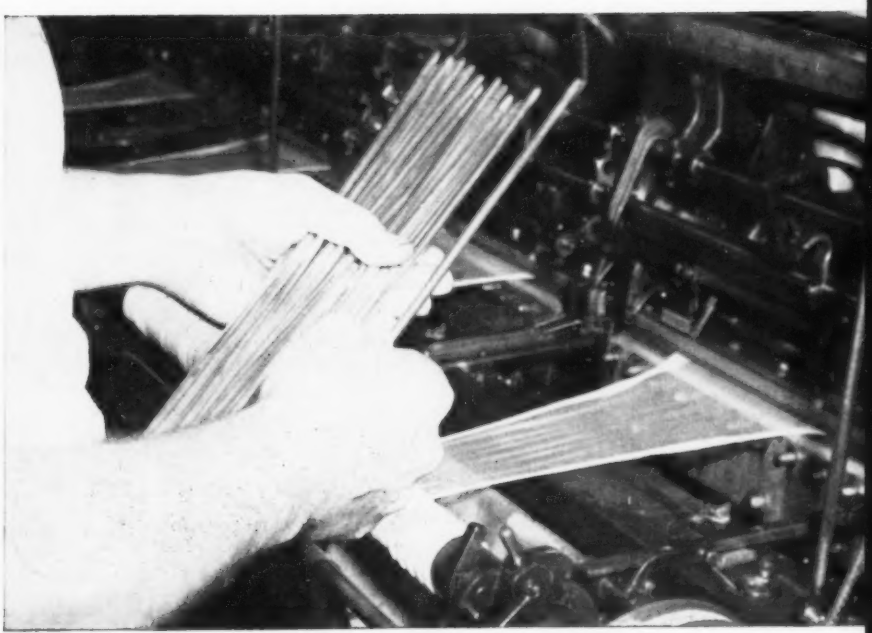


Burrs on welt rods cause pulled threads

Look for burrs and nicks between sets



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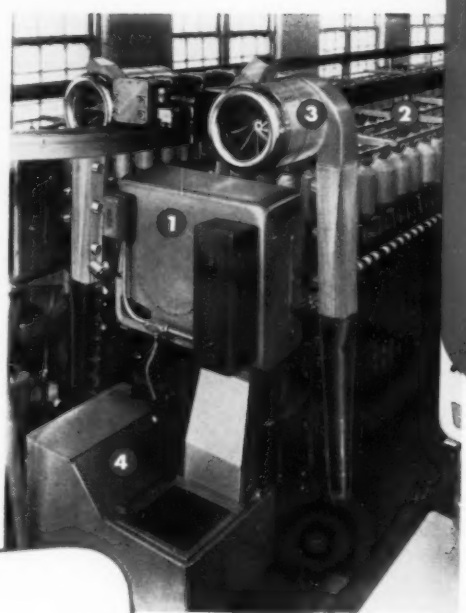

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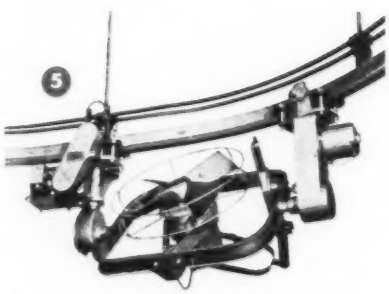
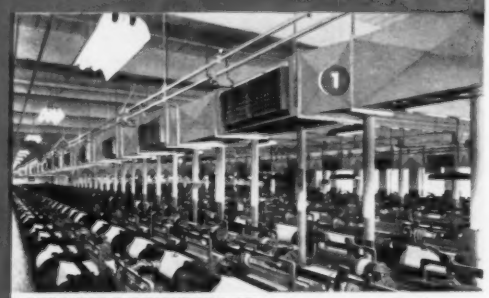
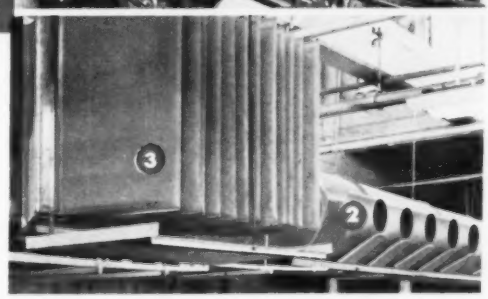


AIR-O-MATION

AIR AT WORK FOR INCREASED PROFITS





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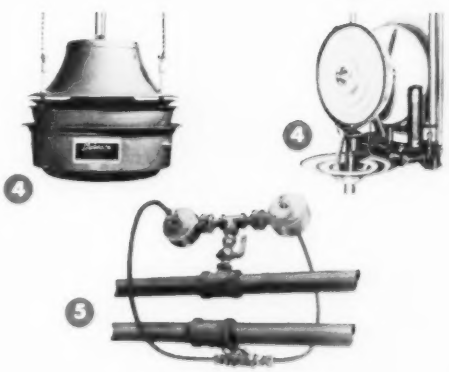

THE BAHNSON COMPANY

WINSTON-SALEM, N.C., U.S.A.

Checked your caustic costs lately?

. . . upon request, a Wyandotte technical-service man will survey your requirements — help you decide if a switch from 50% to 74% caustic is economical

An increase in your caustic requirements, or a change in freight rates can alter your economic position almost overnight in regard to 50% or 74% concentrations. That's why it's wise to check your caustic costs periodically.

Here's an easy way to check: first, using the chart on the opposite page, plot your position in terms of annual requirements and freight rates to see if a saving is possible by switching to 74% caustic (send for Wyandotte's handy free guide, "74% or 50% caustic soda, which for you?" for more complete details). Then, with a basic understanding of your economic position, call in a Wyandotte technical-service man. Together you can analyze all the factors: the cost of concentration; end use of the caustic soda; existing storage and handling facilities; quantity of caustic consumed; plant location.

The results may reveal no savings at all by switching to 74% liquor, or you could save thousands of dollars. In either case, the assistance of a technically trained Wyandotte representative with his familiarity in all phases of caustic soda storage, handling, and uses is at your disposal . . . and there's no obligation. Get in touch with us today. *Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan. Offices in principal cities.*

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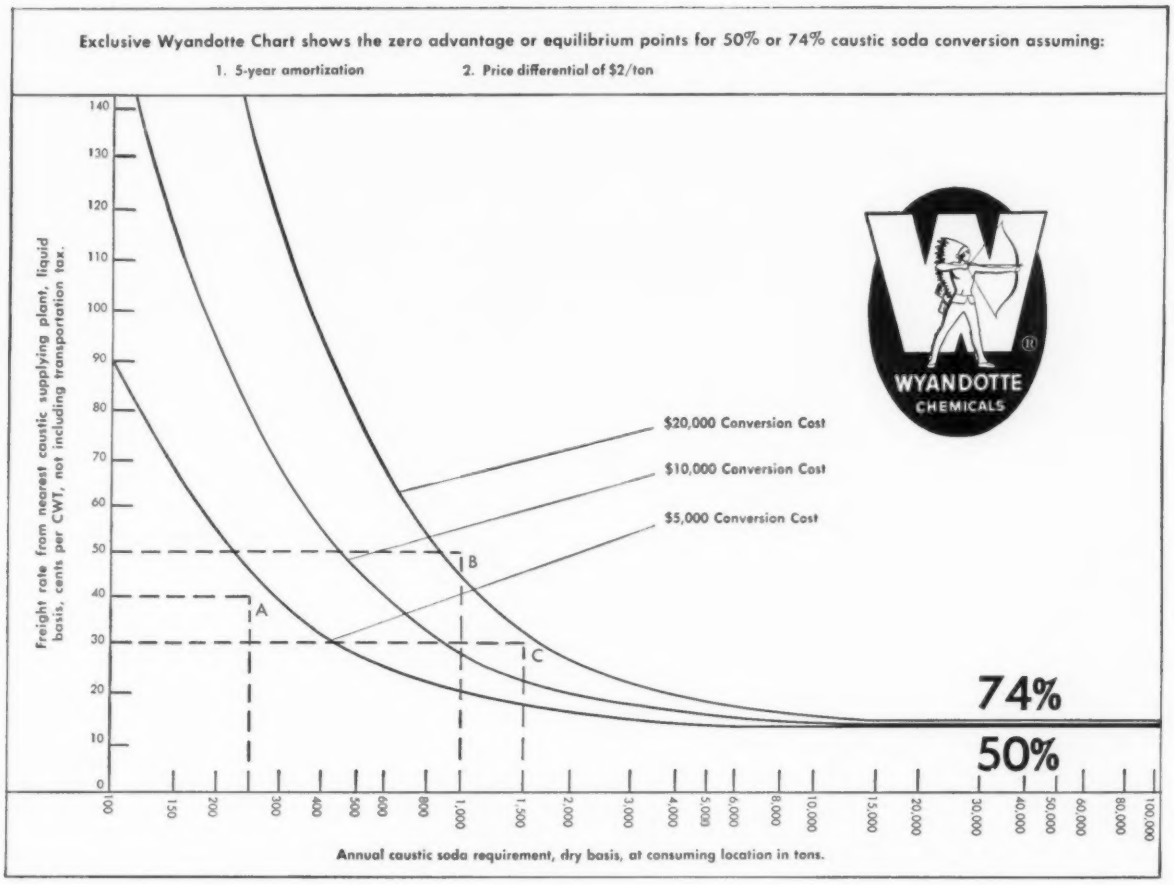
MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

1 After plotting your economic position on Wyandotte chart, call in your Wyandotte technical-service man. This study may bring to light savings of thousands of dollars in freight charges by changing to 74% liquor.

2 Wyandotte engineers — with broad experience in applications of caustic soda and the correct equipment for its proper handling — assist in designing heat exchangers, cooling tower piping, storage tanks, and materials of construction.



HOW TO USE CHART

EXAMPLE A: Freight from nearest producing point to consuming point is 40 cents per hundredweight. Annual consumption by consuming plant is 250 tons caustic soda, dry basis.

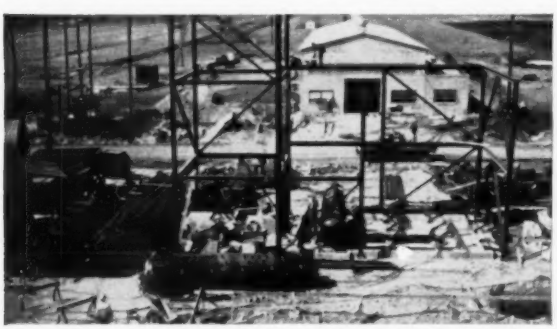
ANSWER: Because Point A lies to the left of the curves, the plant should purchase caustic soda as a 50% liquid.

EXAMPLE B: Freight from nearest producing point to consuming point is 50 cents per hundredweight. Annual consumption by consuming plant is 1000 tons caustic soda, dry basis.

ANSWER: Because Point B lies to the right of the curves, the plant should purchase caustic soda as a 74% liquid, even though additional equipment investment of as much as $20,000 might be found necessary.

EXAMPLE C: Freight from nearest producing point to consuming point is 30 cents per hundredweight. Annual consumption by consuming plant is 1500 tons caustic soda, dry basis.

ANSWER: Because Point C lies between the $10,000 curve and the $20,000 curve, the plant should purchase 50% caustic soda if the additional investment necessary exceeds about $15,000, or should purchase 74% caustic soda if the additional investment is less than about $15,000.



3 When construction problems arise, such as the location of equipment for most efficient operation or more economical installation . . . alternate valves or new materials of construction . . . the Wyandotte technical-service man is available for advice.

4 The Wyandotte technical-service man is on hand to help unload the first tank car of 74% caustic . . . seeing that the outlet leg is properly steamed, diluting water correctly proportioned, temperature controlled, safety precautions followed.

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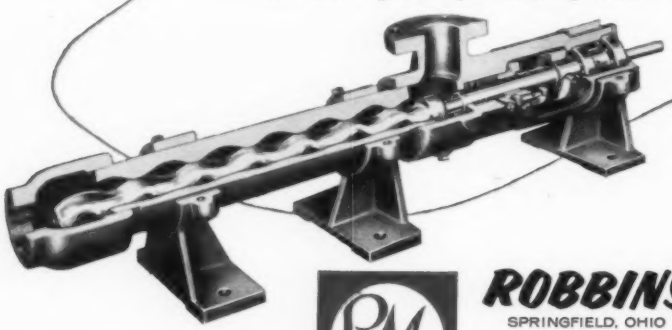
. . . and move corrosives without excessive wear!

Moynos can pump any textile liquid that can be forced through a pipe, even if they're highly viscous or corrosive.

A screw-like rotor revolving in a double threaded stator forms progressing cavities which move all fluids smoothly through the pump, including thickeners or starch size. Corrosive liquids like acid solutions, dye and chlorine do not cause internal wear, because the rotor and stator can be made of special resistant materials. Moyno is the only pump that can satisfactorily handle caustic alkali solutions without causing foaming or aerating.

Many textile mills have drastically cut downtime on mercerizing and sizing machines by installing Moynos to replace rotary pumps which wear quickly and lose capacity and suction characteristics.

Moynos are available in capacities up to 500 gpm; pressures up to 1000 psi. No doubt there are many steps in your processing flowsheet where Moynos can cut costs and improve liquid handling. Write for Bulletin 30TI.



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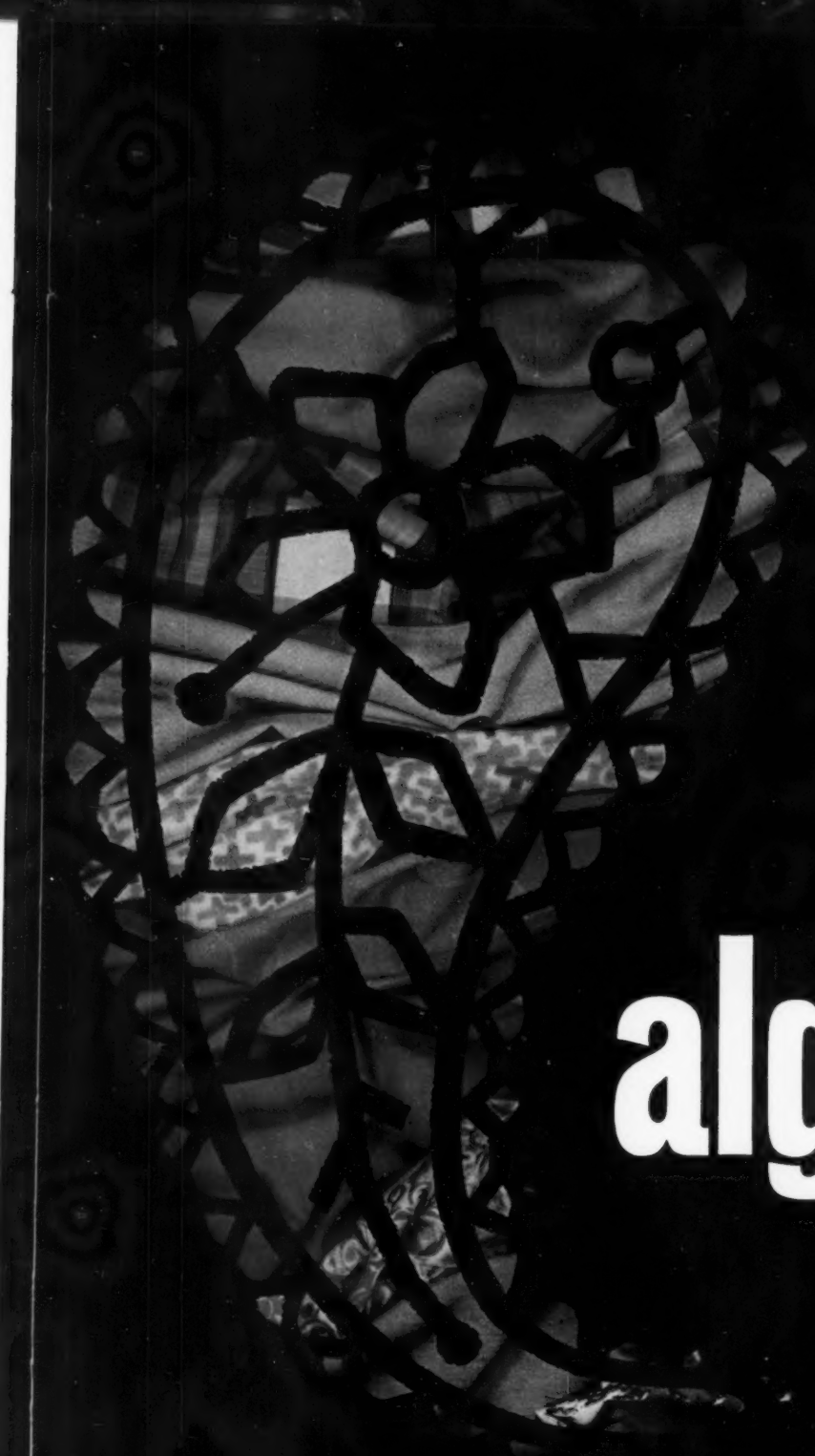

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23.8.8A

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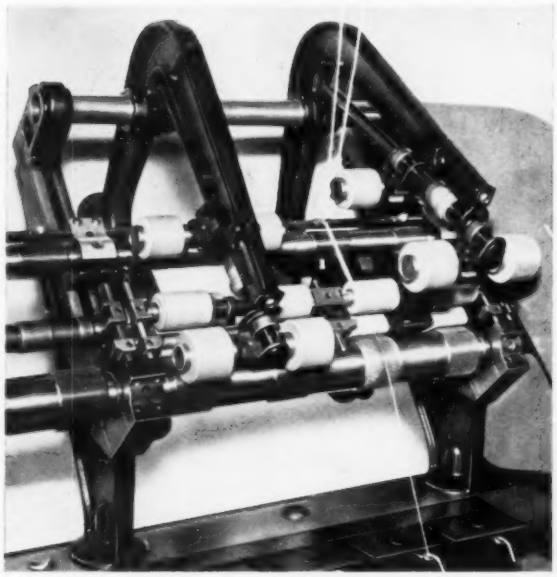
Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Drafts synthetics, worsteds, and blends

The SF-4B drafting element is adaptable to conventional frames for spinning worsted yarns, staple synthetics, and blends.

The system is flexible enough to permit roll settings to be made to accommodate the entire range of commercial wools. For spinning blends from synthetic fibers the range of staple length extends from 2.0" to 7.5". Drafts up to 25 may be attained for suitable stocks.

The rolls are mounted on a 45-degree roll stand that permits the twist to run close to the nip of the front rolls. Roll diameters are optional. A 1⅜" bottom front roll is recommended for staple lengths up to 4½"; a 1 15/16" roll is suggested for a staple range from 3" to 9". The sizes are dependent, of course, on the type of stock.

The top and bottom rolls and the apron bar are adjustable independently of each other and the front rolls. Anti-friction top and bottom rolls are included, with the bottom rolls running in sealed bearings which require relubricating every three months.

Roll weighting is done through springs and a weight arm or horn in the form of a bell crank mounted on a pivot rod on the roll stand. The pressure required to keep the middle top roll in contact with the driving portion of the second bottom roll is created by separate springs with a fixed pressure. A spring in the bottom of the weight arm supplies the over-all pressure.

A pressure gauge is furnished so that the pressure on each arm may be adjusted to a definite and uniform degree. Selected pressures will not change even if the rolls are removed and replaced. A manual readjustment can be made for a change of stock or other operating conditions. Spring pressure is quickly relieved by means of a toggle action lock.

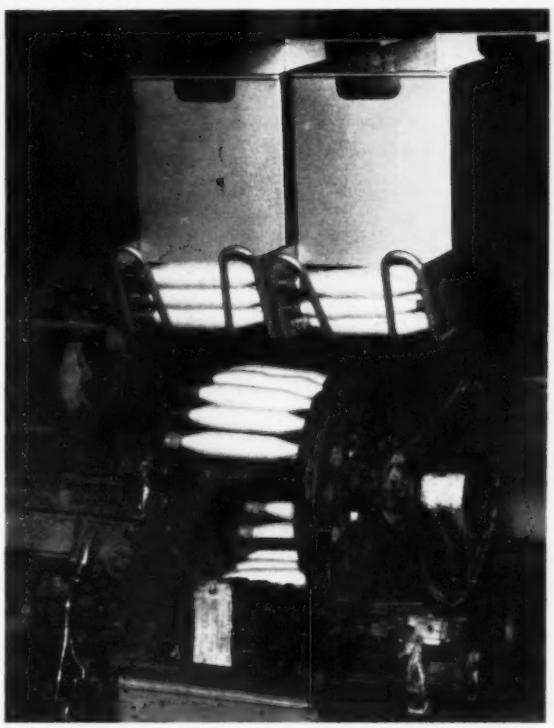
Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write ◂ or use card on page 179; list J-101

All-metal box for one time handling of filling

In addition to the labor and time savings to be realized from a filling handling system in which the yarn remains in the same box from the time it leaves the spinning frame until it is used at the loom, the following advantages are provided by equipment which was recently announced:

A more rugged and longer lasting filling doff box. Of all-metal construction, it features a metal rod which

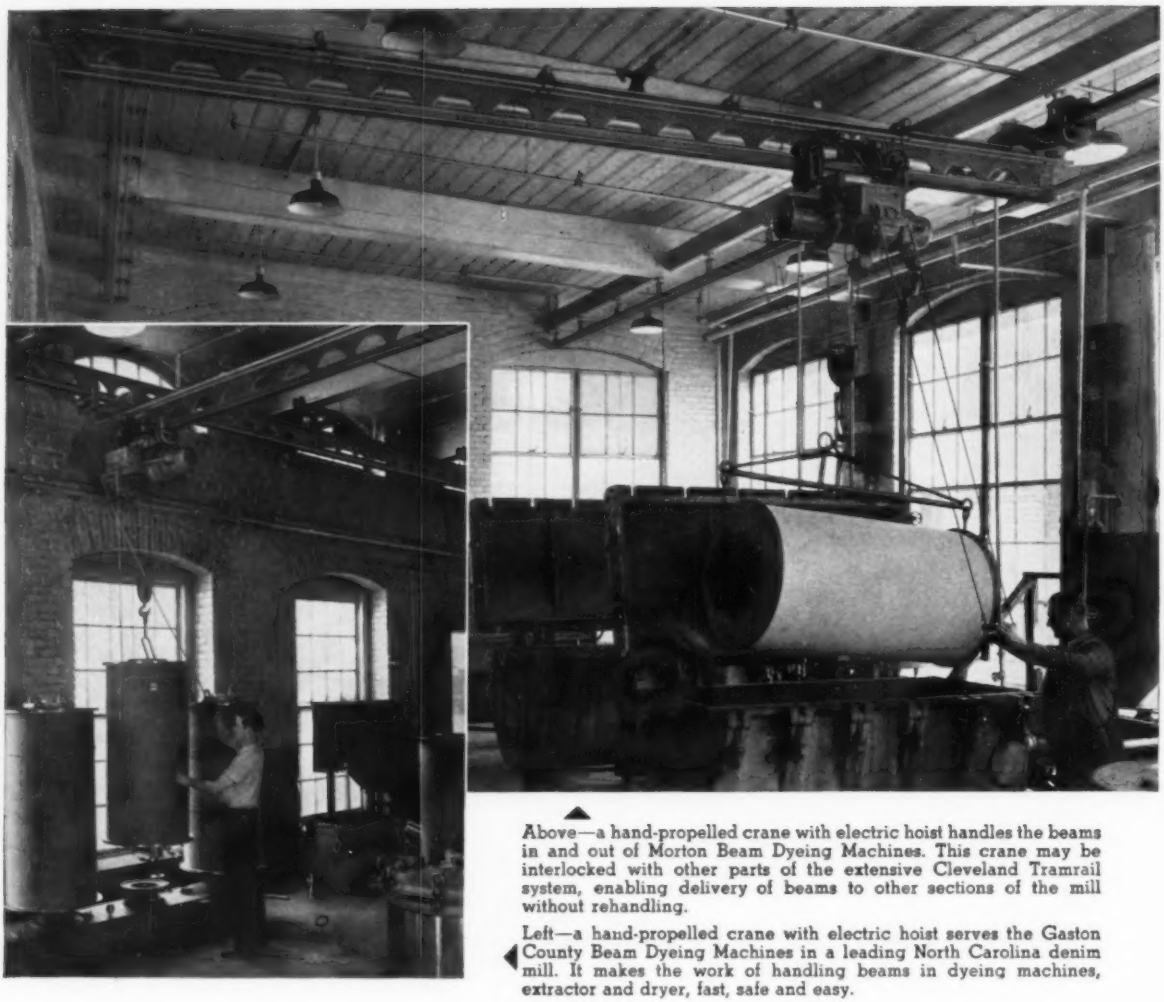


serves as a guard and runner. Rod is smooth so that an operator can safely handle it in any manner.

Specially designed, all-metal stand for installation at the loom requires little space and holds two boxes of filling in a position that allows the trash in the box to fall free through the hole in the bottom as it works to the front with the filling.

Fisher Mfg. Co., Hartwell, Ga.

Do you want more data? Write ◂ or use card on page 179; list J-102



Above—a hand-propelled crane with electric hoist handles the beams in and out of Morton Beam Dyeing Machines. This crane may be interlocked with other parts of the extensive Cleveland Tramrail system, enabling delivery of beams to other sections of the mill without rehandling.

Left—a hand-propelled crane with electric hoist serves the Gaston County Beam Dyeing Machines in a leading North Carolina denim mill. It makes the work of handling beams in dyeing machines, extractor and dryer, fast, safe and easy.

BEAM DYEING made **Fast-Safe-Easy**

IN the big mills where all factors are weighed with extreme care before any equipment is purchased, will be found Cleveland Tramrail cranes or complete overhead materials handling systems.

Handling of beams in and out of kiers either of horizontal or vertical type is one of the many jobs for which Cleveland Tramrail is used. It picks up and delivers beams simply by pulling a cord or pushing a button. Any employee can operate Cleveland Tramrail equipment without previous experience. Hazardous, hard work is made safe, easy and production speeded.

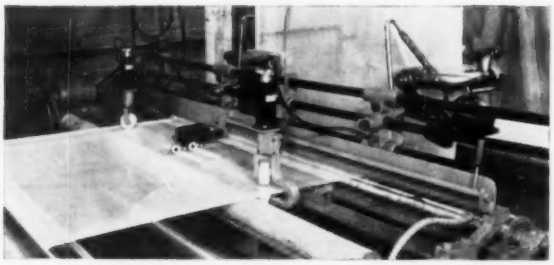
Now, more than ever before, wherever heavy materials are handled, you should consider the use of Cleveland Tramrail to cut unnecessary motion and save time. The experience of Cleveland Tramrail engineers, with many varied textile installations, is available to you without obligation.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 2851 E. 287 ST. • WICKLIFFE, OHIO



Automatically solves skewed weft problems

A new electro-mechanical weft straightener, called the "Skew-Liner," features truly automatic operation of the detection mechanism which is easy to set and virtually maintenance-free.

First, the cloth is threaded through the unit. Then, with weft properly aligned, control adjustment is set at "zero," and from there on the machine is "on its own."

Feeler rolls transmit filling distortion to warp threads, to be picked up by detector wheels. Detection unit triggers split-second action of the pivot roll, and skew disappears.

Mount Hope Machine Co., Inc., 15 Fifth St., Taunton, Mass.

Do you want more data? Write ◂ or use card on page 179; list J-103

Fast, accurate control of process heating

A multi-frequency radiation pyrometer with a specially calibrated potentiometer recorder-controller makes possible the accurate measurement and control of low surface-temperatures of fast-moving webs.

Called the Velotron Multi-Frequency Radiation Pyrometer System, it may be combined with the Velotron multifrequency radiant heat (infrared) equipment to reduce electric power consumption in heat processing, provide better quality control, reduce operating costs, and give a constant check on the heat processing itself. The system may also be used with any form of heat processing and curing in the textile industry—hot air, steam, or radiant lamps.

Within one second the equipment measures the product's surface temperature, rather than that of the atmosphere surrounding it, at distances up to 30 feet. The system operates in various ranges from -40 F to 1112 F. By dictating the web speed or the heat intensity it monitors the drying operation.

The Heat-Eye detector makes use of the total radiant energy from the surface of a heated body as a measure of its temperature. It and the potentiometer recorder-controller are sold as package units that do not require the services of a technical specialist to install them.

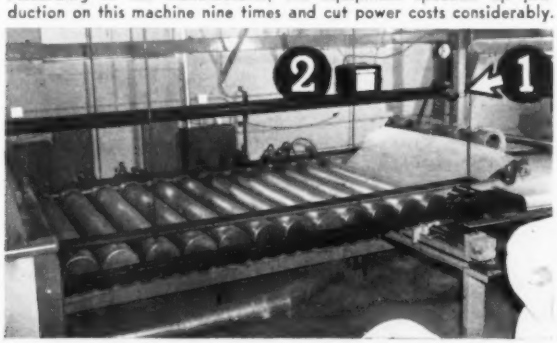
The radiant heat generators offered give rises of 25% in textile drying operation, and in some installations use 40% less power than previous lamps. These units produce heat rays over a wide frequency band to adapt them to drying a wider range of materials. Part of their value lies in their ability to be turned off instantly whenever the web stops moving to prevent web scorching.

The heating equipment is sold in complete assemblies, fabricated from the materials dictated by the end use. The average life of the heating element is more than 5000 hours, and the element can be replaced easily, reusing the original sheath.

Velotron, Inc., 1186 Broadway, New York 1, N. Y.

Do you want more data? Write ◂ or use card on page 179; list J-104

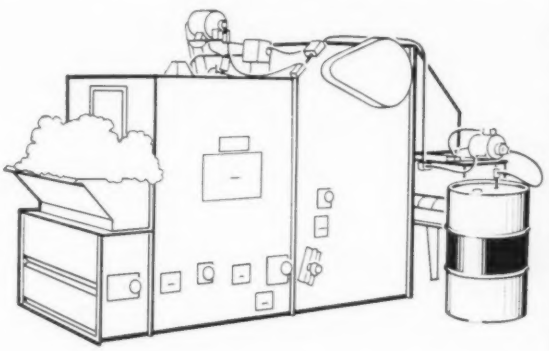
In this mill installation photo, note the "Heat-Eye" detection unit mounted on the vertical post at the right (Arrow 1), the recorder-controller on the far wall (2), and a series of radiant heat generators in the foreground mounted at the end of a tentering-curing-finishing operation. Fabric temperature is monitored by the "Heat-Eye," and the speed of the driving mechanism is thus controlled. Fabric passes under the infrared units in a 3-second pass and is cured and dried. According to the manufacturer, the equipment speeded up production on this machine nine times and cut power costs considerably.



Automatic sprayer for Texaco fiber conditioner

In addition to the "wiper" type equipment which The Texas Co. has for a number of years provided for application of its "Texspray Compound" fiber conditioner in picker beater sections, the firm now offers an automatic spray system to mills which prefer the atomization method.

Usually installed in an opener hopper as indicated in the accompanying drawing, the spray equipment may also



be placed in feeder lines or conveyor pipes if the customer desires.

Controls for the automatic sprayer are electrically interlocked with those of the textile machine on which it is installed, so that the fiber conditioner is applied only when stock is moving through the hopper or conveyor.

Among the advantages to be derived by using Texspray Compound are: reduces fly and dust as much as 75%, increases flexibility of fibers so that there is less fiber breakage, increases production because there are fewer "ends-down," reduces materially the generation of static electricity, contributes to the production of smoother yarns, polishes machine parts with which conditioned fiber comes in contact (for example, card clothing is polished, making stripping easier).

The Texas Co., 135 E. 42nd St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 179; list J-105

PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

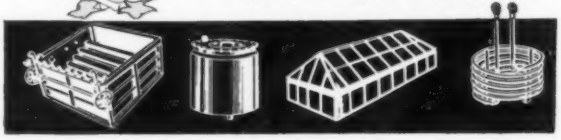
Furnished Teflon-coated if desired.

FOR ECONOMY AND QUALITY. Our modern and progressive metal-working shops, our skilled craftsmen, our know how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

*U. S. PAT. OFF. NO. 2779104

Sims
METAL WORKS
WEST POINT, GEORGIA



United States Supply Co.,
888 Broadway, East Providence, R. I.

Harley D. Hohm, Inc., 128 Buist Ave.,
Greenville, S. C.

Friday Textile Machine & Supply Co.,
Gastonia, N. C.

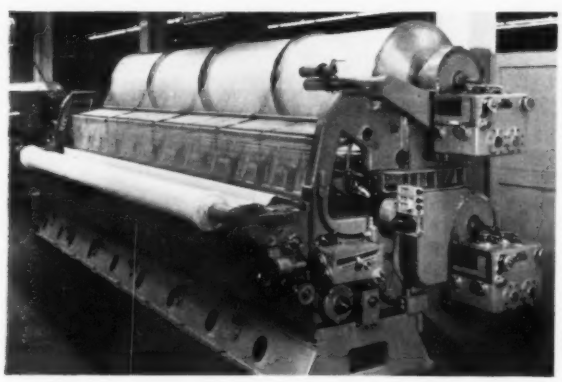
FABRICATORS SINCE 1928

Top-drive filling spindle cuts costs

A mill-tested top-drive filling spinning spindle with a whorl diameter of 25/32" is available. Made without an acorn to provide a lengthened cleaning cycle, it runs in a pre-greased ball bearing which requires lubrication only once every five years. In addition to elimination of the need for frequent oiling, the improved spindle assures production of cleaner yarn since there is no oil mist. Also, higher quality yarn is made because the spindle provides more uniform yarn tension with fewer ends down.

Hartford Machine Screw Co., P. O. Box 1776, Greenville, S. C.

Do you want more data? Write ◂ or use card on page 179; list J-106



"Reading" tricot knitter takes 30" warps

Major modifications have improved the "Reading" high-speed tricot machine introduced two years ago:

(1) The frame has been redesigned to accommodate 30" warps;

(2) The let-off attachments have been rebuilt to accommodate warps up to 30" in diameter;

(3) The gear-type fabric take-up has been provided with a quick-change selector;

(4) The cloth take-up roll has been lowered for the convenience of the operator; and

(5) A selvage control attachment has been added.

Textile Machine Works, Knitting Machine Div., Reading, Pa.

Do you want more data? Write ◂ or use card on page 179; list J-107

Silky Smooth Mohair?

MORAMINE C DOES IT!

Moramine C imparts a silky smooth finish — unobtainable with other softeners — to any fabric. Yes, even to harsh raspy fabrics like mohair.

Moramine C will not yellow at high temperatures • has high resistance to washing and dry cleaning • is an excellent softener and plasticizer in conjunction with thermosetting resins for crush resistance and shrinkage control • prevents "mark-offs" and "lay-marks" • and is perfectly safe for fabric dyes with colors sensitive to alteration of shade or to light fastness change.

Other Moretex Softeners

Moramine NS Morofin AD Morolube GW

These softeners are non-yellowing and eliminate many of the problems of shade changing and color bleeding. They possess varying degrees of nap improving and bulk increasing qualities. A Moretex sales engineer will be glad to assist you in selecting the right one for your purpose.

MORETEX *Chemical Products,* INC.

314 W. Henry St., Spartanburg, S.C.

Established 1908 Manufacturing Chemists

Kemp Singeing Head in Action

Increase singeing

speeds 75% and more . . .

Come to Kemp

Kemp Radiant-Flame Compression Singeing equipment can speed up your operation from 75% to 100%. . . drastically reduce costs for labor, maintenance, and fuel . . . and still turn out a *better product!*

Kemp singeing is a high-speed operation, ideal for modern fabrics. Material travels over burners in a split second; is brushed by a solid mass of flame for a closer, more even singe. The unique Kemp *pre-mix* concept . . . the mixing of oxygen and fuel gas *before* ignition . . . eliminates excess oxygen in the combustion chamber formed by the burner head and rapidly traveling material. Thus, the nap is not burned, but *carbonized* and carried away by escaping combustion gases. The resulting singe is cleaner, faster, and cheaper.

Your Kemp Representative will gladly give you full information and recommendations to speed up your operation. Call him, or write us for Bulletin 6-A. The C. M. Kemp Mfg. Co., 405 E. Oliver St., Baltimore 2, Md.

KEMP OF BALTIMORE

Wet or dry floor cleaning at 12,500 sq ft per hr

The "Convertamatic," a new high-speed combination scrubbing - polishing - vacuum machine for buildings with large floor areas, can be used for either wet or dry floor maintenance operations. It enables one operator to clean 12,500 sq ft per hour. The machine cleans a 24" swath on each pass.

For scrubbing, the machine in a single pass over the floor will lay the cleaning solution, scrub, vacuum up the dirty solution, and damp-dry the floor. For polishing or buffing operations, it will thoroughly polish the floor, and in the same pass, vacuum up all dust and grit.

Electric, gasoline and propane powered models are available.

Advance Floor Machine Co., 4100 Washington Ave. N., Minneapolis 12, Minn.

Do you want more data? Write ◆ or use card on page 179; list J-108

Saves money for ribbon producers

Large savings and finer quality goods are two advantages offered by a roll-up attachment for ribbon looms. Eliminated along with the ribbon and tape boxes are the steps of (1) hanking, (2) roll-up extracting, (3) shaking out, and (4) setting up for dyeing machine. The goods are protected against soiling and tangling while loom load is upped 25%, efficiency 10%.

The ribbons are laid side by side on a beam take-up, cut from the loom in 2000-yd lengths, taken to the continuous dyeing machine, sent through the machine and wound again onto another beam.

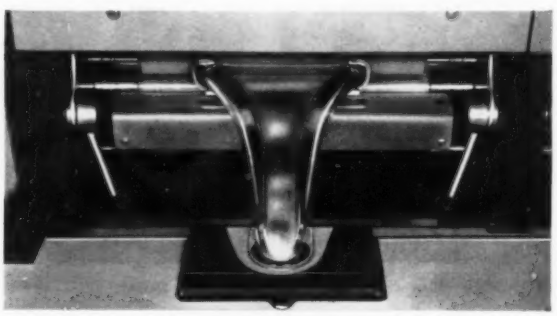
The Fletcher Works, Inc., Second and Glenwood Ave., Philadelphia, Pa.

Do you want more data? Write ◆ or use card on page 179; list J-109

New features of "Versa-matic" drawing frame

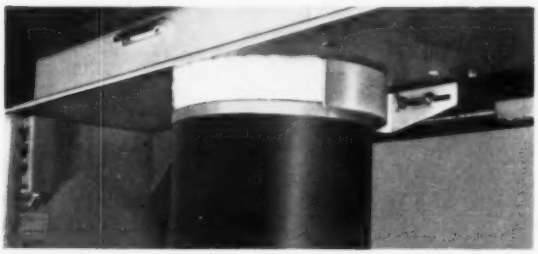
Eleven improvements have recently been added to the "Versa-matic" drawing frame:

(1) A web enclosure with stainless-steel web support



and transparent cover confines the web from the front roll to the trumpet;

(2) "Centri-Guides" (adjustable curved baffles) located just below the coiler plate deflect sliver ends back into



the cans as the sliver approaches the coiler plate;

(3) Pressure plate for top and bottom clearers reduces picking to a minimum;

(4) Plastic cover and compactor for top clearer comb gives a more compact waste accumulation, reduces picking frequency, and keeps waste out of web;

(5) Plastic sliver guides give more positive sliver control to lifting rolls;

(6) Lifting roll clearers scrape lint and foreign matter from lifting rolls;

(7) Redesigned top roll bearings that have greatly improved thrust carrying features;

(8) Anti-friction second bottom roll;

(9) Anti-friction turntable;

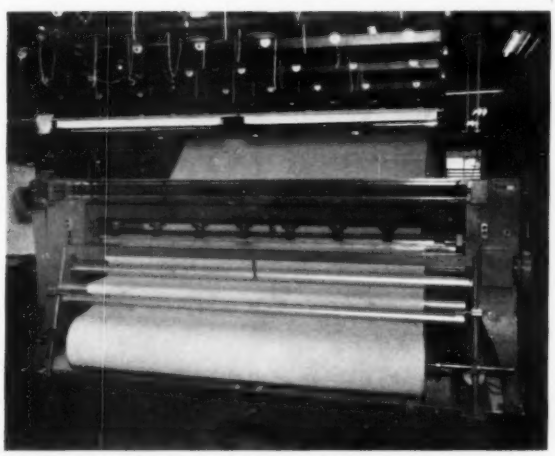
(10) Window-type oil indicator for coiler gear box; and

(11) Stop motions located in five positions give lap-up protection to each line of rolls.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write ◆ or use card on page 179; list J-110

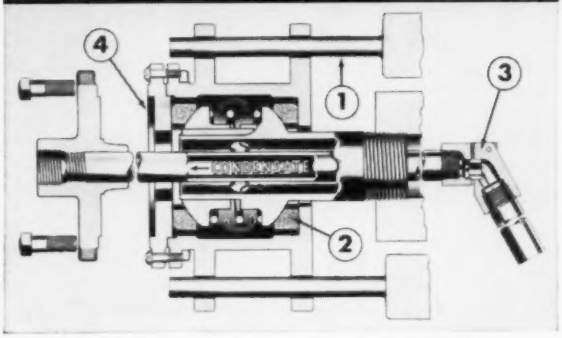
Machine tufts hobnail effect



This is Cobble Brothers' "Hobnail" tufting machine, not the company's new loop/cut tufting machine which was announced in the August issue (p. 167). Through error this same photograph was used as an illustration with the description of the loop/cut machine. The editors regret this and hope that no one was inconvenienced by the mistake.

The "Hobnail" tufting machine (named for the hobnail effect it produces) is basically a standard yardage machine that uses an overriding mechanism for varying the rate of feed of the backing fabric. The cloth feed rate can be varied, for instance, to permit the machine to make three tufts in a row at approximately ⅛" intervals and make

For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

Johnson ROTARY PRESSURE **Joints** First in the Textile Industry

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. **2.** Seals without packing—needs no lubrication or adjusting. **3.** Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. **4.** Assembly plate holds parts in place when head is removed.

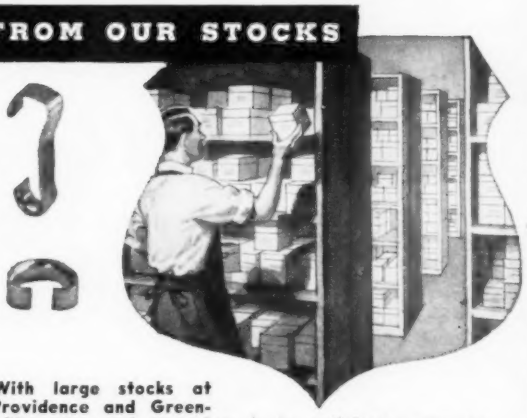
Write for Catalog J-2002

Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

THE JOHNSON CORPORATION
815 Wood St., Three Rivers, Mich.

SERVICE *that Satisfies*

FROM OUR STOCKS



With large stocks at Providence and Greenville, our usual procedure is to anticipate your requirements so that your order can be shipped consistently from stock.

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H. R. FISHER—Concord, N. C.—Box 3013—State 2-1640
H. J. SMITH—Providence—Box 1187—GAspee 1-0100

NEW PRODUCT PARADE

the fourth stitch at a ¾" interval. This, or a similar operation, produces the hobnail fabric.

A cloth feed drive feeds the backing through the tufting machine at a rate determined by the stitch rate desired. After a predetermined number of revolutions of the main shaft of the tufting machine, a secondary cloth feed drive takes over to drive the cloth feed rolls. The secondary drive accelerates the feed rolls for an interval to give a wider spacing between the rows of tufts.

Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn.

Do you want more data? Write ◂ or use card on page 179; list J-111

New floor finish collects little dirt

An outstanding feature of floors finished with a new urethane material is the fact that it collects little dirt because of the hardness and gloss of the coating. Urethane films are also resistant to oil and grease.

Ease of maintenance has been shown dramatically on textile mill floors where sticky accumulations of lint and starch do not adhere to test areas painted with the new finish.

The finish dries rapidly under what would be adverse conditions for standard materials. In fact, urethane finishes cure by reaction with atmospheric moisture. Under summer conditions when humidity is 50 per cent or higher, "tack-free time" is one to two hours and "sand and re-coat time" is three to four hours. Two coats can be applied with commercial spreaders over a week-end.

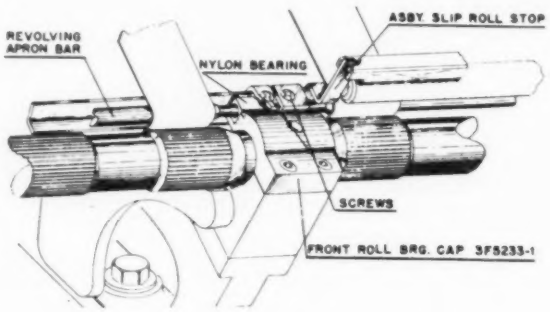
Another advantage provided by this material is its ability to dry without wrinkling when applied in unusually heavy coats. Adhesion over new wood, concrete, and properly sanded old wood finishes is excellent. It can be applied like standard varnishes and shellac, and is satisfactory with or without thinning.

Finishes Div., E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

Do you want more data? Write ◂ or use card on page 179; list J-112

Revolving apron bar adds to apron life

A revolving apron bar for F-5 roving drafting elements is mounted in nylon bearings to reduce drag and wear on the inner surface of the apron. As a consequence, the smoother running aprons contribute to increased over-all efficiency of the drafting operation. Relatively inexpen-

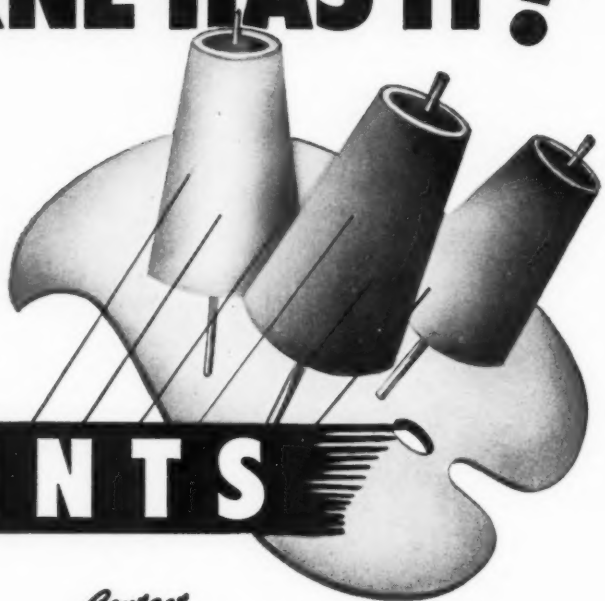


ONLY BORNE HAS IT!

Identification
on All Synthetics—Blends
Plus **FUGITIVITY**
UNMATCHED
ON NYLON & WOOL!

The Amazing New

SOLUTINTS



SOLUTINTS are a series of fugitive tints that provide identification, lubrication, and improved processing of all natural and synthetic fibres. In addition to giving *maximum tinctorial strength* — SOLUTINTS combine controlled moisture retention with *improved scourability*,

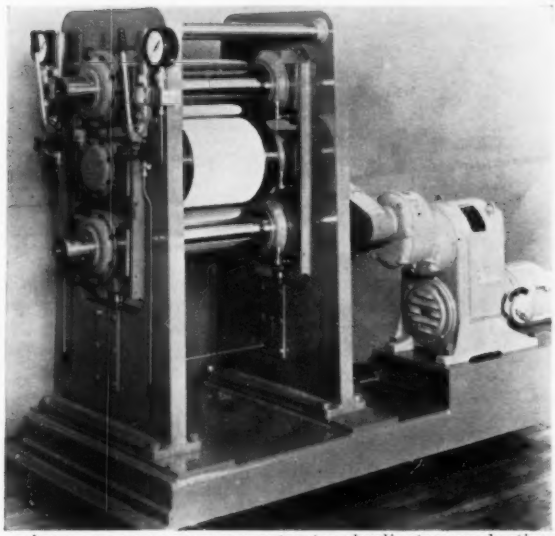
Contact
BORNE CHEMICAL COMPANY, INC.
82 Years of Textile Know-How
Formerly BORNE, SCRYMSER COMPANY
Elizabeth, N. J. • Charlotte, N. C.

sive, easily and quickly installed, the application requires no lubrication other than the initial light film of oil used in breaking in the nylon bearings. The parts needed to apply the Auxiliary Revolving Apron Bar are: the apron bar roll, lint-proof nylon bearings, slip roll stop assembly, and front roll bearing cap.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 179; list J-113

Three-roll calender for lab use



A three-roll laboratory calender duplicates production results on a narrow width of experimental goods.

Equipped with a variable-speed motor, self-aligning roller bearings, and independent hydraulic pressure controls for each side, the unit is ruggedly built and designed for fast roll removal. It is made in 12" to 24" widths.

B. F. Perkins & Son, Inc., Holyoke, Mass.

Do you want more data? Write ◂ or use card on page 179; list J-114

Sends messages 63% faster

The Model 28 ASR Automatic Send-Receive Set is built for both communication and data process needs. A "packaged" set, it contains facilities for typing, tape punching, tape transmission and reception, sending and receiving page copy on message paper or multipart business forms, and tape as a by-product of both incoming and outgoing messages. Containing a battery of remote controls customized to the buyer's requirements, the system offers a choice of perforating and reperforating devices which type the characters right on the tape. It operates at a line speed of 100 words per minute.

Teletype Corp., sub. of Western Electric, Inc., 4100 Fullerton Ave., Chicago 39, Ill.

Do you want more data? Write ◂ or use card on page 179; list J-115

EXCLUSIVE U. S. SELLING AGENTS

WATSON & DESMOND

P. O. BOX 1954 CHARLOTTE, N. C.

NEW PRODUCT PARADE

New dyes and chemicals

The highly efficient discharge printing assistant, Algepon PD, is effective on practically all pigments, including those of the difficult-to-discharge phthalocyanine type. Aside from its use in printing pastes (it is compatible with the ingredients normally found in such mixtures), it is an excellent stripping assistant for pigment-dyed goods. Its use permits phthalocyanine pigments to be reduced to a clear white, sharp pattern within a five- to ten-minute period in the steam ager.

Arkansas Co., Inc., Newark, N. J.

Do you want more data? Write supplier or use card on page 179; list J-201

An etherized starch-resin finish for cotton and synthetic fabrics provides maximum durability of fabric hand through repeated launderings, even in solutions containing powdered bleaches—in tests the finish suffered only an eight per cent loss after three washings in a solution containing such a bleach, while finishes incorporating ordinary starches and starch derivatives had a loss of at least 39 per cent. Cold-water-soluble, the bath requires no cooking and subsequent cooling; only agitation is needed as the Solvitose HDF is added.

Morningstar-Paisley, Inc., 630 West 51st St., New York 19, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-202

Bright, yellowish-green shades on wool and nylon are produced by Capracyl Green 2Y. It makes possible many shades previously unobtainable in the range of dyestuffs to which it belongs, and the shades produced have good fastness to light and wet processing. Recommended for application to suitings, carpeting, and upholstering fabrics, it dyes levelly on nylon and wool, builds up on tone from pastel to full greens, becomes yellower in shade in incandescent light, and stains effect fibers similar to its companion dyes.

E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington 98, Del.

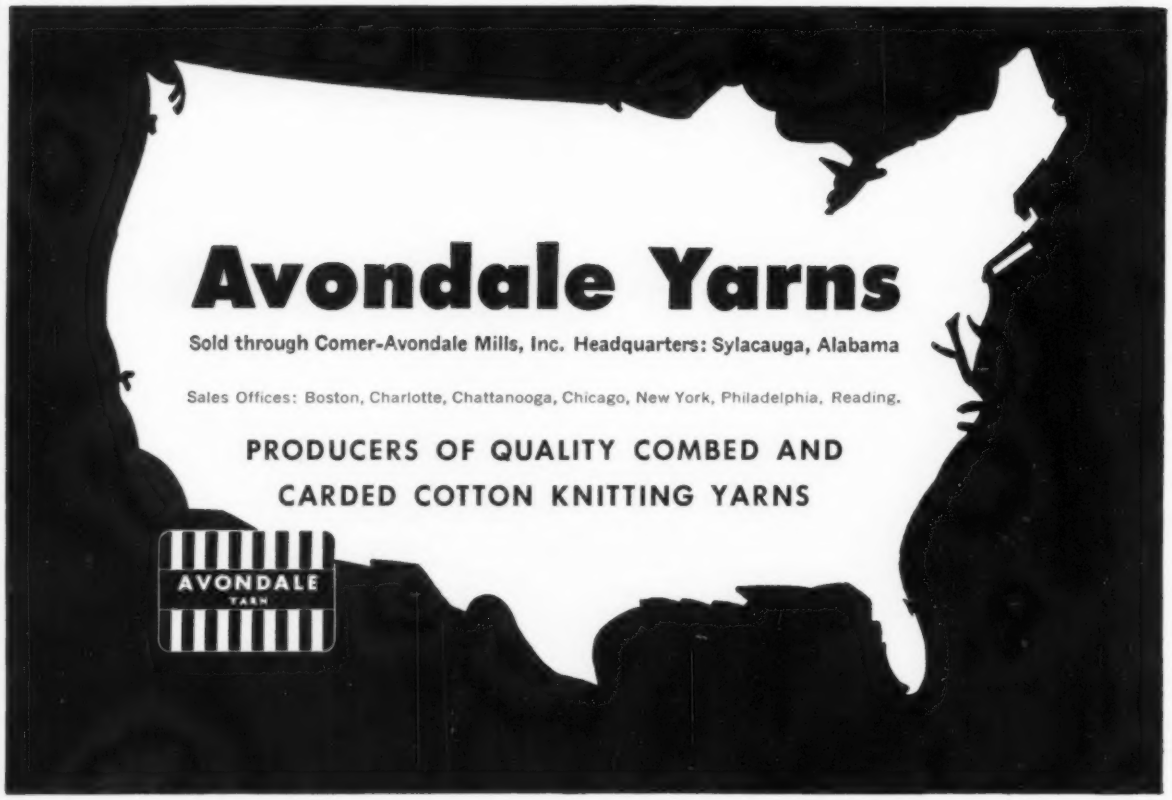
Do you want more data? Write supplier or use card on page 179; list J-203

A bright violet dyestuff, called Ponsol Brilliant Violet 4RND Paste, is an anthraquinone derivative vat dye developed especially for the package and beam dyeing of cotton or rayon. It yields clear, bright violet shades and can be used either alone or as a brightening component for navies and other shades. Equivalent to Ponsol Brilliant Violet 4RN in shade, strength, and fastness properties, it shows good resistance to light, washing, chlorine and peroxide bleaching, drycleaning, and pressing. Recommended for application in pad-jig, vat-acid, or in circulating equipment.

E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington 98, Del.

Do you want more data? Write supplier or use card on page 179; list J-204

The anthraquinone vat dye Ponsol Yellow 6 GL Paste has outstanding lightfastness and good fastness to washing and to chlorine and peroxide bleaching. As an exceptionally bright dye for use as a self shade and a shading element in the production of chartreuse, mint, and other shades requiring good lightfastness, its use extends to towelings, dress goods, sportswear and other uses requiring good general fastness. Applied to cotton and rayon by conventional methods, it also produces light to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Sold through Comer-Avondale Mills, Inc. Headquarters: Sylacauga, Alabama
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YARN

light-medium shades by conventional printing methods and for prints of any depth by blotch development or the Savagraph process.

E. I. du Pont de Nemours & Co., Inc., Dyes and Chemicals Div., Wilmington 98, Del.

Do you want more data? Write supplier or use card on page 179; list J-205

The textile softener and lubricant, Lauramine #20, gives improved winding properties, greater softness, and better knitting qualities to package-dyed cotton yarns. Cotton fabrics gain in hand and body and in cutting and sewing properties when so treated. Non-yellowing, it does not affect shades of dyed goods, and it improves the knitting qualities of woolen, worsted, and mixed yarns.

Laurel Soap Mfg. Co., Inc., Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 179; list J-206

Woolens are permanently mothproofed with Larvatex when it is applied in the dyebath. An emulsified concentrate of Dieldrin, it also offers protection to worsteds and hair fibers.

Hart Products Corp., 1440 Broadway, New York 18, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-207

A textile finishing agent for "wash-and-wear" fabrics increases the life and improves the softness of garments made with synthetic or natural fibers. The product gives the finished fabric greater abrasion resistance along with higher seam and tear strength. The wax-like polymer is marketed under the name of A-C Polyethylene 629.

Allied Chemical Corp., 40 Rector St., New York, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-208

The high-activity, polyacrylamide-type flocculating agent, Separan NP20, offers high efficiency (more flocculating activity per unit weight basis) in general chemical processing and industrial waste treatment. The material is a synthetic, water-soluble, high-molecular-weight polymer which has uniform effectiveness over a wide pH range.

The Dow Chemical Co., Midland, Mich.

Do you want more data? Write supplier or use card on page 179; list J-209

Silicone antifoams are available in a series of formulations that give the user all the efficiencies of standard antifoams at a substantial cost saving. The agents (1) disperse immediately, (2) are supplied as concentrates ready to use or for quick dilution, (3) last longer, and (4) have a long storage life.

Hodag Chemical Corp., 7247 N. Central Park, Chicago 45, Ill.

Do you want more data? Write supplier or use card on page 179; list J-210

A bright red dye for wool, nylon, or silk—alone or in blends with cellulosic fibers—is known as Irgalan Bordeaux GRL. It shows excellent fastness ratings to light, domestic washing, perspiration, dry and wet cleaning, carbonizing, crocking.

Geigy Dyestuffs div., Geigy Chemical Corp., Ardsley, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-211

An extender for fabric coatings (called SAIB) is commercially available. Cloth coating lacquers modified with SAIB have been evaluated with over 32% solids content at application viscosity. The coating exhibited good toughness and low temperature flexibility.

Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-212

Here's FREE help on textile mill cleaning

Just about every important cleaning problem a textile mill runs up against is discussed in the Oakite booklet, "Textile Mill Cleaning Guide."

Like the sections on job-tested cleaning procedures for overhaul work ... on cleaning of machinery ... plant maintenance cleaning. There's also a section on cleaning of air-conditioning and humidifying equipment.

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Equipment briefs

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Polaroid Corp., Cambridge 39, Mass.

Do you want more data? Write supplier or use card on page 179; list J-213

Casters equipped with Micarta wheels are designed for heavy duty under the most severe operating conditions and can be used for all types of rolling equipment ranging from lightweight skids and dollies to heavy, nonpowered trucks. Wheel sizes range from 3¼" to 12" with capacities from 300 lb to 2000 lb. Light in weight, the wheels give easy rolling action, quiet operation, maximum floor protection, and trouble-free life.

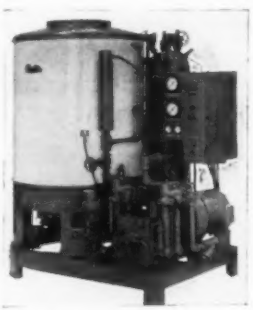
Payson Mfg. Co., 2916-2930 Jackson Blvd., Chicago 12, Ill.

Do you want more data? Write supplier or use card on page 179; list J-214

Label printing on die-cut pressure-sensitive paper, gummed paper, and other types of labels in roll form is done by the Model 126AF label printing machine. Partially preprinted stock may be overprinted or marked completely from blank stock. Automatic feed checker assures perfect alignment of label stock. Printed stock may be rerolled, perforated and rerolled, or cut and stacked.

Markem Machine Co., 150 Congress St., Keene 64, N. H.

Do you want more data? Write supplier or use card on page 179; list J-215



Oil-burning steam generators with a boiler horsepower rating of 160 (from 60 F feedwater) occupy as little as one-fourth the space required by ordinary steam boilers of equivalent ratings. In three minutes from a cold start a full "head" of steam is available. The units have high thermal efficiency.

Clayton Mfg. Co., 449 Temple City Blvd., El Monte, Calif.

Do you want more data? Write supplier or use card on page 179; list J-216

A resilient floor covering (Scotch-Tred) with a nonslip surface combines the beauty and comfort of carpeting with the practicality and toughness of tile. It is flexible enough to be bent double, yet is so durable that in laboratory tests it consistently outwears most popular floor coverings. By stripping a protective backliner from the pressure-sensitive adhesive, the material is made ready to be applied wherever people are in danger of slipping and falling.

Minnesota Mining and Mfg. Co., Dept. F8-233, 900 Bush St., St. Paul 6, Minn.

Do you want more data? Write supplier or use card on page 179; list J-217

Sampling valves in standard pipe sizes from ¼" through 2" allow manual sampling (in minute or volume quantities) of hazardous liquids. The OPW valve incor-

porates a metal-to-metal seat with a self-cleaning slide action. Once the handle is released, the valve closes itself.

Jordan Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio

Do you want more data? Write supplier or use card on page 179; list J-218

A series of unit (bin) vibrators especially designed for "pinpoint" installation on bins, hoppers, etc. (in which materials being handled show a tendency to pack, bridge, or stock), requires no rectifiers and works directly from either 50-cycle a-c or 60-cycle a-c with no change in any component.

Eriez Mfg. Co., 237 Magnet Dr., Erie, Pa.

Do you want more data? Write supplier or use card on page 179; list J-219

Pillow block ball bearings are designed to meet specific customer requirements for varying over-all dimensions. The LAKH bearing features a wide inner ring ball bearing incorporating a frictionless and wearless seal that keeps lubricants in and foreign matter out. The bearing is self-aligning in any direction and can be installed immediately.

The Fafnir Bearing Co., New Britain, Conn.

Do you want more data? Write supplier or use card on page 179; list J-220

A lightwall pipe fitting to simplify connections by welding or flanging has been added to the Speedline eccentric and concentric reducers series. The straight section provides extra working room and removes weld area from a change in pipe dimension. Designed to connect lightwall stainless pipe in Schedules 5 and 10, it substantially reduces labor time and costs during installation. When demountable joints are required, either or both ends of the reducers can be expanded into Speedline insert flanges or Speedline unions to provide a leak-proof joint without welding.

Horace T. Potts Co., 504 E. Erie Ave., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 179; list J-221

A button sewing machine stitches four-hole buttons without the usual cross-over stitch, thus giving the button the appearance of being sewn by hand. The Model 200-10 has another advantage in that each row of stitches is independently fastened, with the result that should one row of stitches loosen the other row will keep the button from falling off. The machine makes 16 stitches per button and will work with any popular size button.

Lewis Sewing Machine Co., 315 West 35th St., New York 1, N. Y.

Do you want more data? Write supplier or use card on page 179; list J-222

Lift truck booms (they offer many short cuts in handling such large bulky items as machinery, structural timber, etc.) are available in four types. Trucks from 2000 to 8000 pounds capacity are equipped with a type of boom that has a sliding hook that can be locked in any position on the boom.

Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.

Do you want more data? Write supplier or use card on page 179; list J-223

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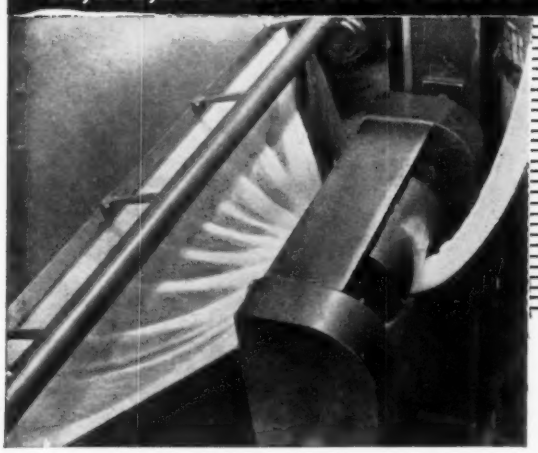

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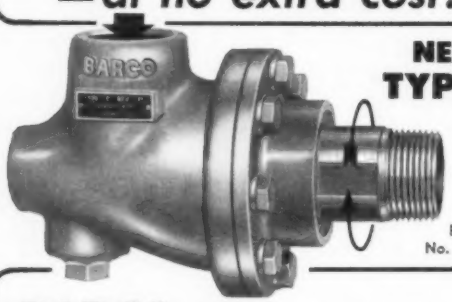

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More equipment briefs

A motorized gear reducer, called Line-A-Spede, is powered by standard NEMA frame motors mounted on a shelf attached to the reducer. Double, triple, and quadruple reduction gear units, with ratios up to 1487 to 1, are available for motor ratings of 1 to 75 hp. Designed for installations where downtime is critical, the motors can be replaced rapidly.

The Louis Allis Co., Dept. P, 427 E. Stewart St., Milwaukee 1, Wis.

Do you want more data? Write supplier or use card on page 179; list J-224

A 2500-lb capacity double-faced pallet lift truck employs a mechanism that permits entry without the slightest movement even of an empty pallet. Completely welded, it has specially ribbed reinforcement to provide maximum strength, weighs 225 pounds (48" truck length), and handles any standard double-faced pallet.

The Colson Corp., Special Products Div., Somerville, Mass.

Do you want more data? Write supplier or use card on page 179; list J-225

Measure the chloride content of biological samples rapidly and accurately with the Aminco-Cotlove Chloride Titrator. Designed so that the concentration of chloride in solutions can be determined by titration with silver ions (titration times have been reduced below 60 seconds, maybe as low as 5 seconds), the instrument will detect as little as 0.25 microequivalents of chloride—standard deviations are approximately 0.5% of the mean value.

American Instrument Co., 8030 Georgia Ave., Silver Springs, Md.

Do you want more data? Write supplier or use card on page 179; list J-226

Welded steel wing type self-cleaning pulleys with Taper-Lock hubs assist in belt alignment by preventing build-up of material on the pulley face. The hubs give the equivalent of a shrunk fit on the shafting while permitting easy assembly and disassembly.

Continental Gin Co., Industrial Div., Birmingham 2, Ala.

Do you want more data? Write supplier or use card on page 179; list J-227

Compact and lightweight a-c electric motors that are built to NEMA rerate specifications offer advantages in space saving. For example: One of these motors weighs 65 lb (1 hp, 1800 rpm, open drip-proof, squirrel cage) compared to the 74 lb of one conventional product. Only open drip-proof models are available at present.

Brook Motor Corp., 3553 West Peterson Ave., Chicago 45, Ill.

Do you want more data? Write supplier or use card on page 179; list J-228

Air hoists are available in either link or roller chain types in ¼-, ½-, and 1-ton capacities. Developed for production lifting jobs, these Budgit air hoists have frames made from aluminum alloy, alloy heat-treated gearing with machine-shaved teeth, easily adjusted load brake, built-in muffler that greatly reduces operating noise, one-hand pendant cord control, and upper and lower safety hooks made of steel forgings. All models operate on 80 psi line pressure.

Shaw-Box & Hoist Division of Manning, Maxwell & Moore, Inc., Muskegon, Mich.

Do you want more data? Write supplier or use card on page 179; list J-229

Efficient glass fiber insulation for covering the exterior of metal ducts and other heating or cooling equipment is designed for applications where temperatures range from sub-zero to 350 F. Called Therma-K, it provides low

thermal conductivity, exceptionally light weight, and long life. Available in rolled blankets of standard lengths, widths, thicknesses, and densities, it can be supplied plain or with factory-applied facings.

Ehret Magnesia Mfg. Co., Valley Forge, Pa.

Do you want more data? Write supplier or use card on page 179; list J-230

A 4000-lb capacity, solid-tire fork truck, with a wheelbase of only 40 inches, and named the Carloader 4024-S, is designed for loading or unloading boxcars and trucks and for operation in low-stacking areas where maneuverability is required. Powered by a four cylinder Continental engine of 124 cubic inch displacement, the machine will travel 7.4 mph forward and 6.3 mph in reverse, and will climb a 16 per cent grade loaded. Its lift speed is 30 feet per minute loaded.

Industrial Truck Division, Clark Equipment Company, Battle Creek, Mich.

Do you want more data? Write supplier or use card on page 179; list J-231

A tilting motor base that provides correct belt tensioning at all times is now available for electric-motor-driven applications ranging from 1 to 3 hp. It is especially designed for use with variable speed pulleys and permits convenient, easy belt changing on cone step pulleys. Exact speed control is maintained by means of a hand screw adjustment.

Lovejoy Flexible Coupling Co., 4900 West Lake St., Chicago 44, Ill.

Do you want more data? Write supplier or use card on page 179; list J-232

A gate valve with aluminum body and nylon seating disks weighs only 40% as much as a conventional all-bronze gate valve. Even in the presence of grit the resilient, but tough, nylon affords exceptionally tight and lasting shut-off. It has broad corrosion resistance qualities; and the absence of dissimilar metals eliminates the possibility of electrolytic corrosion. Seat rings are unnecessary. Available in 3" screwed end size.

Jordan Industrial Sales Div., OPW Corp., 6013 Wiehe Rd., Cincinnati, Ohio.

Do you want more data? Write supplier or use card on page 179; list J-233

Precision lubricant measuring valve systems are designed to dispense measured quantities of fluid and semi-fluid materials. The systems are readily adaptable to fully automated operations. Applications include: filling gear cases; small transmissions; machine bearings; electric motor bearings; and applying insulation and sealing compounds. These systems may be permanent or portable, and they will dispense as little as 1/20 ounce or more than two quarts per application.

Lincoln Engineering Co., Div. The McNeil Machine & Engineering Co., 4010 Goodfellow Blvd., St. Louis 20, Mo.

Do you want more data? Write supplier or use card on page 179; list J-234

Chemical concentration control may be exercised by the Dow-Hart Titrator, a system of controlled-volume pumps which meter both sample and standard solutions. The continuous titrator can be coupled with instrumentation for complete automatic control of a process. Where slurries are involved, the titrator uses a third liquid end to meter solvent or diluent. It is especially useful in controlling concentrations that cannot be controlled by conductivity, pH, or specific gravity.

Milton Roy Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa.

Do you want more data? Write supplier or use card on page 179; list J-235

Cyclone separator-type dust collectors are available with radial fans, a change that has increased the performance of the units. Recommended for use wherever

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large quantities of dust, lint, etc., must be collected, the collectors utilize centrifugal force to precipitate dust from the air stream. It settles into a dust reservoir. Up to 95% foreign matter is trapped in this manner. The remaining ultra-fine dust is trapped in filter bags or exhausted.

Torit Mfg. Co., 287 Walnut St., St. Paul, Minn.

Do you want more data? Write supplier or use card on page 179; list J-236

New books

Applied Mathematics for Engineers and Physicists gives the engineer and applied physicist the principal mathematical techniques they need to analyze the usual mathematical problems that arise in practice and to understand important current technical papers. Available from McGraw-Hill Book Co., Inc., 330 West 42nd St., New York 36, N. Y. Price: $8.75.

Written for the man who is called upon to appraise a problem in materials handling and make recommendation to assure the desired result, *Materials Handling Applications* reviews the many factors in such complex studies and spells out the necessary steps essential in evaluating possible methods. The book assists one in preparing for a survey, making it, and evaluating the results. The author analyzes various types of containers and handling techniques, classifies equipment by function, etc. Available from Chilton Co. Book Division, 56th & Chestnut Sts., Philadelphia 39, Pa.

Know Your Packaging Material provides the most recent information on packaging materials. This revised edition of a basic reference guide is largely rewritten to include recent technical developments. The publication discusses the principal packaging materials, including foils, paper and boxboard, films, and foam plastics. The properties, limitations, and applications of these materials are thoroughly explained. Available from the American Management Association, Inc., 1515 Broadway, Times Square, New York 36, N. Y. Price: $3.00. (AMA members, $2.00)

Biographical Abstracts of Methods for Analysis of Synthetic Detergents STP 150-B is a 24-page compilation issued to follow closely the original literature and thus to be of greater assistance to those working in the field to standardize methods for surface active agent analysis. Available from the American Society for Testing Materials Headquarters, 1916 Race St., Philadelphia 3, Pa. Price: $1.50.

Understanding Collective Bargaining presents collective bargaining from the point of view of the executive who does not specialize in industrial relations alone. Over 40 authorities discuss every aspect of the subject; and in nontechnical language show how to prepare for contract talks, how to function effectively at the bargaining table, and how to check the contract for clarity and precision. Basic bargaining issues, including seniority, across-the-board wage increases, fringe benefits, and grievance procedures, are reevaluated in the light of recent developments. Available from The American Management Association, Inc., 1515 Broadway, Times Square, New York 36, N. Y.

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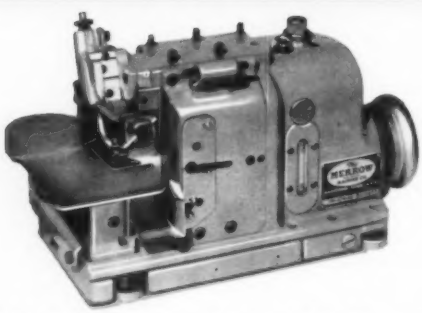

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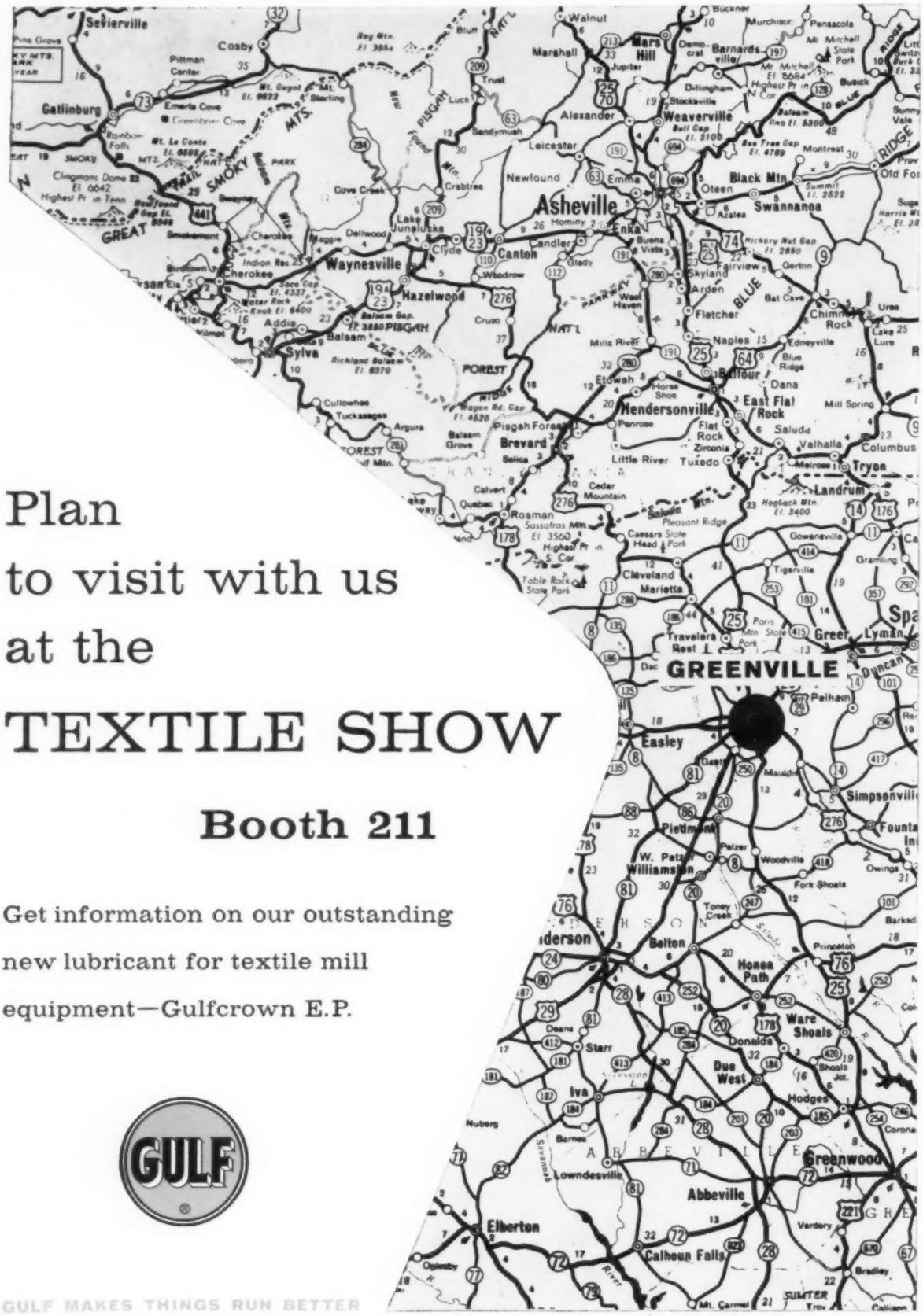

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9-2 SIMPLIFIED RELAMPING PLAN. Bulletin shows how simplified group replacement of lamps is made possible by uniform performance of G.E. lamps. Large Lamp Dept., General Electric Co., Schenectady, N. Y.

9-3 TEXTILE MACHINES AND ENGINEERING. Brochure describes the organization of MAECO, a company which provides access to the engineering departments, machine shops and testing laboratories of leading Southern industrial firms. Maeco, Inc., P. O. Box 507, Gastonia, N. C.

9-4 CARD FEEDERS. Bulletin tells of new improvements on Bramwell feeders which provide quality at lower cost on short, medium and long fibers and at normal and extra high production rates. Geo. S. Harwood & Son, Inc., 50 LaGrange St., Worcester 8, Mass.

9-5 RECOVERY OF MERCERIZING CAUSTIC. Brochure describes three types of evaporators for recovery of otherwise wasted mercerizing caustic and for additional heated water for mill needs. Swenson Evaporator Co., Harvey, Ill.

9-6 ANCHORING TEXTILE MACHINERY. Booklet represents long study on engineering vibration control and isolation for textile machinery through unisorb mountings. Dept. WCH, The Felters Co., 210 South St., Boston 11, Mass.

9-7 PAPER THERMOMETERS. Bulletin describes disposable paper thermometers for measuring predetermined temperatures by exhibiting an irreversible color change. The Paper Thermometer Co., 10 Stagg Drive, Natick, Mass.

9-8 STOP FOR ROVING FAILURE. Brochure tells how device instantly detects all roving failures and stops frame; also how operators can handle more spindles with less ends down. Adams, Inc., 209 E. Stone Ave., Greenville, S. C.

9-9 POLYVINYL ACETATE EMULSION. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Corp. of America, Plastics Div., 744 Broad St., Newark 2, N. J.

9-10 PACKAGE . . . UNITIZE . . . SHIP. Booklet contains many new methods of packaging and unitizing products and recommended methods for shipping these products by rail, truck, etc. Signode Steel Strapping Co., 2600 N. Western Avenue, Chicago 47, Ill.

9-11 SRRL OPENER, CLEANER. Bulletin describes various lines of machinery, including SRRL Opener-Cleaner, Cleaning Condensers, Special looms, etc. Davidson-Kennedy Co., 1090 Jefferson St. N.W., Atlanta, Ga.

9-12 SYNTHETIC LATEX. Booklet describes FR-S, a new, improved, high quality synthetic latex, including specifications and application data. Sales Dept., Firestone Synthetic Rubber & Latex Co., 381 Wilbeth Rd., Akron 1, Ohio.

9-13 SLOTTED STEEL ANGLE. Brochure shows how to build an infinite variety of structures with Dexion slotted, cold rolled, galvanized steel angle. Odell Mill Supply Co., 300 N. Forbis St., P. O. Box O, Greensboro, N. C.

9-14 ELECTRONIC PACKAGED DRIVE. Brochure describes Ultraflex E packaged drive which utilizes static power and direct current motors running on alternating current which has been converted. Cutler Hammer, Inc., Milwaukee 1, Wisc.

9-15 CLOTH INSPECTORS. Leaflets give advantages, speeds, and application of model 300 C-54 and model 200 C-54 cloth inspectors. Sykes Foundry & Machine Co., Burlington, N. C.

9-16 AIR PRODUCTS FOR TEXTILES. Booklet describes complete line of separators, afterdriers, filtrators, drains, governors, etc. Wilkerson Co., Englewood, Colorado.

9-17 TOTALLY ENCLOSED MOTORS. Bulletin describes new line of totally enclosed, fan cooled textile motors from 7½ through 25 horsepower for spinning and roving frames, pickers, opening equipment, etc. General Electric Co., Schenectady 5, New York.

HELPFUL BOOKLETS FREE!

OPENING THROUGH ROVING

R-1 Lummus Pepper-Shaker Opener —Gives complete details and photographs Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-2 Static Elimination — How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

R-3 Card Grinding Information — Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

R-4 Card Clothing — Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

R-5 Versa-Matic Drawing Frame — Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

R-6 Sargent Opener—Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-7 Ball Bearing Comb Boxes — Describes working principle, shows cut-away Views, Southern States Equipment Corp., Hampton, Georgia.

R-8 Feathertouch Drafting — Describes "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

R-9 Automatic Weighing Feeders — Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. W. D. Dodenhoff Co., Inc., Box 178, Greenville, S. C.

R-11 Flexidyne Individual Card Drive—Describes operating principles, includes prices. Dodge Mfg. Co., Mishawaka, Indiana.

R-12 Bobbins — Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fiber Co., Johnson City, N. Y.

R-14 Pneumastop For Fly Frames—Brochure shows type of installation and method of operation. Pneumafil Corp., Charlotte 8, N. C.

R-15 Advantages of Aldrich Pickers —Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-16 Universal Card Coiler—Gives 12 reasons why it's "the best," includes dimensions. McDonough Power Equipment, Inc., McDonough, Ga.

R-17 New Condenser Tape — Describes Supr-O-Tape an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 Coilers and Conversions — Describes new complete coilers and conversions for cards. Southern States Equipment Corp., Hampton, Ga.

R-19 84" Woolen Card — Includes picture, floor plan, description, and technical details. Davis & Furber Machine Co., North Andover, Mass.

R-20 SRRL Opener—Cleaner—Information on new SRRL development for opening and cleaning cotton being manufactured for sale to mills by Davidson-Kennedy Co., 1090 Jefferson St., N. W., Atlanta, Ga.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 Spinning News — Up-to-the minute news on spinning equipment. Roberts Co., Sanford, N. C.

R-103 Products For Spinning and Weaving—Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

R-104 New Bobbin Manual — Only complete, authoritative bobbin guide in the industry. Write direct to Dept. DD, Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

R-105 Spindle Oil — "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

R-106 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton, 303 West Lehigh Ave., Philadelphia 33, Pa.

R-108 High Speed Automatic Quiller —Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

R-110 Stop Frame On Roving Failure—Adamstop instantly detects roving failures, stops frame. Adams, Inc., 209 East Stone Ave., Greenville, S. C.

R-111 Automatic Cop Winder—Tells how high production with less labor is possible. F. A. Lazenby Co. 3106 Elm Ave., Baltimore 11, Md.

R-112 Bahnson Packaged Modernization—Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

R-113 Sectional Warper — Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

R-114 Conical Rings and Flyers — Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

R-115 Precise Winding Machine — For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

R-116 Automatic Cleaning Equipment—Working details and advantages of the Tri-Rail Cleaner. American Monorail Co., 13107 Athens Ave., Cleveland 7, Ohio.

R-117 Aluminum Section Beams — Lists advantages, includes prices and delivery schedules. Hayes Industries, Inc., Jackson, Mich.

R-118 Lubricants For Textiles — Samples of Ben Boy Bearing, Spindle, Twister Lubricants and Non-Melting Oils. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-119 Custom Made Thread Guides—Includes composition, properties, specifications of all designs. American Lava Corporation Chattanooga 5, Tenn.

R-120 Spinning Frame Conversions—Big-package, new-frame results at half the cost. Meadows Mfg. Co., Station A., Atlanta, Ga.

R-121 Collecto-Vac — New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

R-122 Static Eliminator For Warpers-Slashers-Creels—Increased production, improved quality, reduced waste. The Portland Co., 22 Fore St., Portland, Maine.

R-123 Spinning and Twister Rings — Complete details, pictures, price lists. Whitinsville Spinning Ring Co., Whitinsville, Mass.

R-125 Lint-Free Creel—Complete details and pictures of the new Airfoil Design. Pneumafil Corporation, Charlotte 8, N. C.

R-126 Gear Bulletins — Cover products and gears for the complete textile mill. Precision Gear & Machine Co., 2001 N. Tryon St., Charlotte 2, N. C.

R-128 Suction Cleaning System—Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

R-129 Facts About Your Flyers and Spindles—Advantages of smooth flyer and spindle operation. Ideal Machine Shops Bessemer City, N. C.

R-132 Traveling Cleaners—Describes improved frame and room cleaners. Parks-Cramer Co., Fitchburg, Mass.

R-133 Lapless Endless Spinner—Full information available. Ton Tex Corporation, 31 Columbus Ave., Englewood, N. J.

(Continued Next Page)

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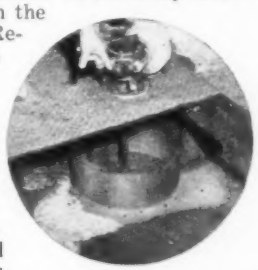

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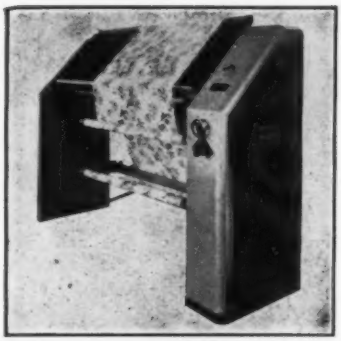

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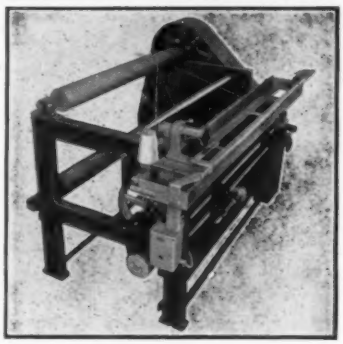

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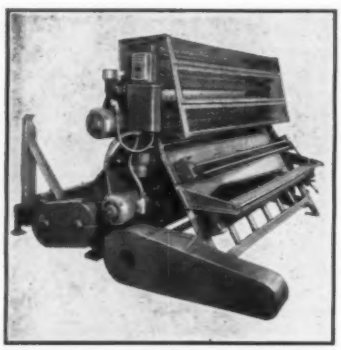

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R-135 Worsted Spinning — Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

R-139 Spindle Oiling Machine—Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

R-141 Handy Spinning Reference — Shows traveler speeds, sizes of ring flanges. Victor Ring Traveler Co., Providence, R. I. and Gastonia, N. C.

R-142 Unirail Uptwister — Higher yarn quality and better packages at faster speeds. Universal Winding Co., P. O. Box 1605, Providence, R. I.

R-144 Precision Textile Winding — Tensions and Density Control for winding rubber cones. Kidde Mfg. Co., 35 Farrand St., Bloomfield, N. J.

R-145 Roller Bearing Spindles — Pictured in cut-away views, advantages described. The Marquette Metal Products Co., 1145 Glenwood Ave., Cleveland, Ohio.

R-146 Cone Winder—Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

R-147 Short Cut To Staple Fiber Spinning—Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

R-148 Weaver's Knotter — Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

R-149 Textile Roll Coverings — Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

R-150 Lint-Free Motor — Describes motor for constant speed a-c driven pickers, roving frames, spinning and twisting frames, etc. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-151 Tape For Driving Spindles — Describes banding for spindle drives on twisting, roving and spinning. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-152 Giant Aluminum Cotton Beams —Describes 38 x 54" section beams for cotton. Hayes Industries, Inc., Jackson, Mich.

R-153 Woolen Spinning Frame — Colored picture, complete details Davis & Furber Machine Co., North Andover, Mass.

R-154 Large Package Twister—Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 4354, Atlanta, Ga.

R-155 Wide Setover Pin Drafter — Booklet describes advantages, technical aspects, adaptments of wide setover Pin Drafter. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

SLASHING—WEAVING—CLOTH ROOM—TUFTING

R-201 Looms — Describes "World's Largest Line of Looms." Crompton & Knowles Loom Works, Worcester 1 Mass.

R-202 Counting And Measuring Devices—Wide range of counting devices for all types of textile machinery Veeder-Root, Inc., Hartford, Conn.

R-203 Loom Supplies — Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

R-204 Innovation In Textile Drying—Details on Steam or Gas "Hot Air" Slasher. J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, New York.

R-206 Loom Production Charts — Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

R-207 Aluminum Beams—Describes lightweight beams for textiles, Hayes Industries, Inc., Jackson, Mich.

R-208 The Story Of Starches — History and information on manufacture and use of starches. National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

R-209 Loading System — Pneumatic loading system for Saco-Lowell slasher. The Foxboro Company, Foxboro, Mass.

R-211 Steel Warp Beams—Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

R-212 Penford Gums In Textiles — Describes excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-213 Saco-Lowell Positrol Slasher—Includes advantages, photographs, cutaway drawings. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

R-214 Rotary Unions—Cut costs, get better sealing on can dryers. Perfecting Service Company, 332 Atando Ave., Charlotte, N. C.

R-216 Air Slasher Dryer — Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-217 Butt-Tacking Sewing Machine —Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

R-218 Loom Reed Booklet — Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

R-219 Cocker Equipment—Information on warp sizer, beam warper, creels. tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

R-220 Chemical Data Sheets—Available on a full range of chemicals. Nopco Chemical Co., Harrison, N. J.

R-223 Tufting Machines — Describes automatic pattern attachment. Cobble Bros. Machinery Co., Inc., River Road, Chattanooga, Tenn.

R-226 Prevent Fabric Distortion — How to eliminate distortion and where to check for it. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-227 Formulas For Slashing Arnel —Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

R-228 The Random Web Process — Describes the Rando-Webber and Rando-Feeder. Bulletin 105. Curlator Corp., Textile Div., 501 W. Commercial St., Rochester, N. Y.

R-230 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

R-232 Hydraulic Slasher Drives — Bulletin 5571 describes economical approach to improved slasher operation. Vickers, Inc., 1036 Peachtree St., Atlanta, Ga.

R-233 Textile Accessories — Gives specifications of Gates textile accessories in handy pocket booklet. The Gates Rubber Co., 1001 Broadway, Denver 17, Colorado.

R-234 Cocker Slashers — Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

R-235 Mounts For Looms — Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

R-236 Unifil Loom Winder — Describes new concept of filling preparation which needs no quilling area. Universal Winding Co., P. O. Box 1605, Providence, R. I.

R-237 High Speed Warp Sizer—Gives outstanding features and specifications. Cocker Machine & Foundry Co., Gastonia, N. C.

R-238 Traveling Loom Cleaner—Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

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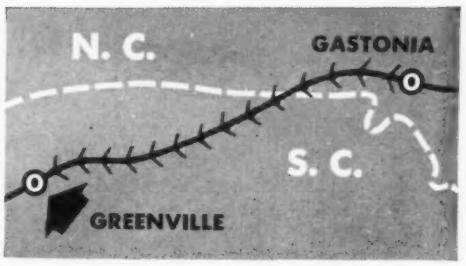

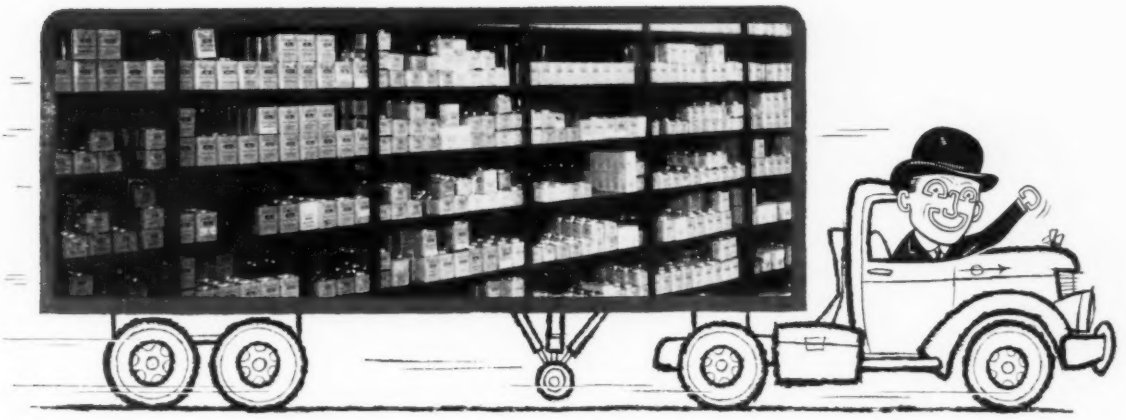

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R-239 Draper Repair Parts Catalog —Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

R-240 Baling Presses — Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

R-241 Textile Machinery Parts Catalog — Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

R-242 Instruments For Accuracy. — Systems for sizing and slashing. Bulletin 98229, Taylor Instrument Co., Rochester, N. Y.

R-243 Counting Devices — Describes complete line of of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

R-244 Squirrel-Cage Loom Motor — Describes totally enclosed, non-ventilated, constant-speed motors. Westinghouse Electric Co., P. O. Box 2278, Pittsburgh 30, Pa.

R-245 Static Bars — Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

R-246 Care Of Draper Shuttles — Describes how longer, troublefree service may be obtained. Draper Corporation, Hopedale, Mass.

R-247 Clutch Brake Motor For Draper Looms — Describes compact power package for driving Draper looms. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-250 Bulk Handling of Starch—Bulletin surveys advantages and disadvantages of a bulk system for starch. It describes the types of equipment available for each component and gives estimates of costs. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

R-251 Small Pilot Slasher — Information on new all-electric Callaway Slasher. Ideal for mills which must prepare a lot of samples. West Point Foundry & Machine Co., West Point, Georgia.

R-252 Weaving Machines — Textile job report No. 20 on Warner & Swasey Sulzer weaving machines at Yale Woolen Mills. Warner & Swasey, 5701 Carnegie Ave., Cleveland 3, Ohio.

R-253 One-Piece Sizing Agent — Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

R-254 Lubricant for Synthetics — Booklet illustrates Fibregard, a colloidal lubricant that adheres uniformly and continuously to the surfaces of man-made fibers. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

KNITTING

R-301 Singlehead Full-Fashioned Machine — Literature on request from the Wildman Jacquard Mfg. Co., Full Fashioned Div., Norristown, Pa.

R-302 Forged Head Aluminum Beams — Gives specifications on new high yardage beams. Milton Machine Works, Inc., Milton, Pa.

R-303 Raschel Knitter — Describes new Raschel-type knitting machine. Kidde Manufacturing Co., Inc., 35 Farrand St., Bloomfield, N. J.

R-304 Vibralon For Hosiery—Greater snag resistance, dullness, warmth and absorbency. W. F. Fancourt Co., 519 S. Delaware Ave., Philadelphia 47, Pa.

R-306 Booklets On Fidelity Machines — Details on "400", Multi-Design Ribber, Skein Reelers. Fidelity Machine Co., 3908-18 Frankford Ave., Philadelphia 24, Pa.

R-307 Needle Oil Does Not Stain — Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

DYEING—BLEACHING—FINISHING—PRINTING

R-401 Solvent Detergents — Capabilities and advantages noted. Oakite Products, Inc., 126C Rector St., New York, N. Y.

R-402 Tubes For Package Dyeing — Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

R-403 Finishing Machinery — Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

R-404 Water Analysis — Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-406 Urea, Formaldehyde.—Literature on urea, formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-407 Acid Mordant Blue B—Details on Acid Alizarine Blue B for bright navy shades. Zinsser & Co., Inc., Hastings on Hudson 6, New York.

R-408 Hydrogen Peroxide — Covers properties, uses and handling. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-412 Cationic Surface Active Agent — Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

R-413 Chemicals, Dyes And Intermediates — Complete file of bulletins available. Metro-Atlantic, Inc., Centredale, R. I.

R-414 Wetting Agent — Describes highly concentrated detergent and wetting agent. Rohm & Haas Co., Washington Square, Philadelphia, Pa.

R-415 Peroxide Bleaching System — Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept. T.I-2, Wilmington, Del.

R-416 Surface Tension Depressant — Tells how product can be used for wetting, dye leveling or as a penetrant. Hart Products Corp., 1440 Broadway, New York, N. Y.

R-417 Textile Chemicals — Describes leading products for wet processers. Royce Chemical Co., Carlton Hill, N. J.

R-418 Industrial Water Treatment — Discusses fundamentals of industrial water treatment. Rohm & Haas Co., Resinous Products Div., Washington Square, Philadelphia 5, Pa.

R-419 Theoretical and Applied Silk Soaking — Outlines methods and gives suggestions. Hart Products Corp., 1440 Broadway, New York 18, New York.

R-420 Brine For Textile Industry — Describes Lixate Process for making brine. International Salt Co., Inc., Scranton, Pa.

R-421 Depuma — Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., 2010 Clarke Bldg., Pittsburgh 19, Pa.

R-422 Catalyst AC-6 — Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Dept. T1-3, Springfield 2, Ohio.

R-423 Soda Ash Bulletin — Contains useful data covering this subject. Solvay Sales Division Allied Chemical & Dye Corp., 40 Rector St., New York 6, New York.

R-424 Water Repellent Finish — Describes Aquarol water repellent finish. Arkansas Co., Inc., Newark, N. J.

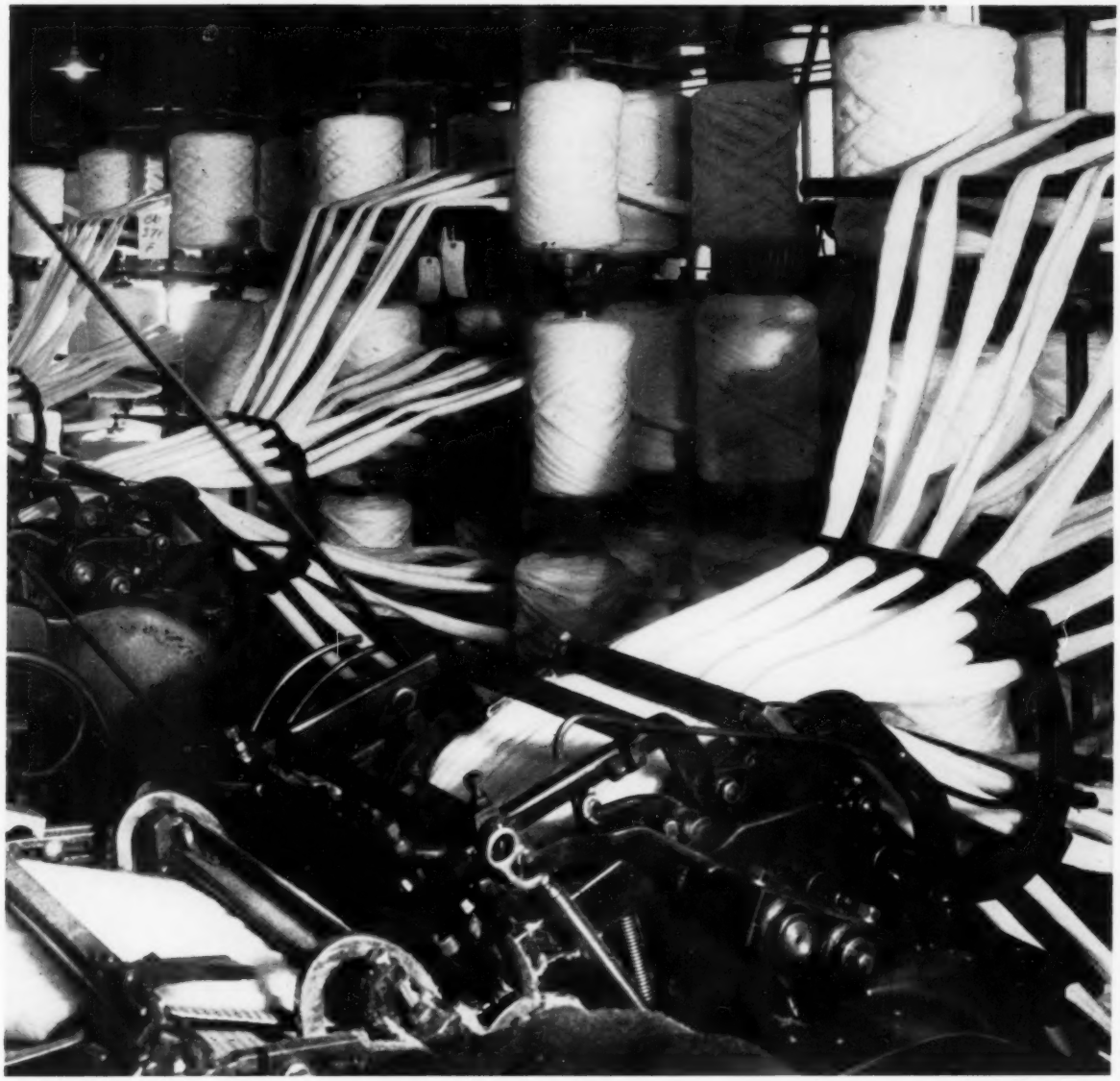
R-426 Industrial Oil — Catalogs on Industrial Oil and Fatty Acid products. Swift & Company, Industrial Oil Dept., 1800 165th St., Hammond, Indiana.

R-428 Chemical Catalog — Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

R-429 Chemical Bulletins — Issued each month as a help to wet processers. WICA Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

R-430 Hydraulic Power Units — Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

(Continued Next Page)



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R-431 Proctor Drying Machinery — Describes all types of dryers, includes information on preboarding. Proctor & Schwartz., Inc., 7th and Tabor Rd., Philadelphia, Pa.

R-433 Safe Handling Of Hydrogen Peroxide — Lists safety rules to be followed in handling the product. Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-434 Base Detergent Acids—Bulletin tells how new TENN-ACIDS offer simple and practical method for mills to prepare concentrated, low cloud point detergents based on alkyl aryl sulfonates. Tennessee Corp., Marketing Research & Development Dept., 1330 W. Peachtree St., Atlanta 9, Ga.

R-435 Cut Water Treatment Costs — Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

R-436 Rapidase For De-Sizing — The properties and characteristics of Rapidase in detail. Wallerstein Co., Inc., 180 Madison Avenue, New York 16, N. Y.

R-437 Caustic Soda—Book describes the uses, manufacturing processes, unloading and dissolving diagrams, materials of construction, analytical processes, etc. Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan.

R-438 Surface-Active Agent — Properties, applications, of Nonionic Actylphenoxyethanol Triton. Rohm & Haas Co., Special Products Dept., Washington Square, Philadelphia, Pa.

R-440 Guiders And Tension Devices — Straight line guiding of open width goods. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-441 Processing Arnel Fabrics and Blends — Formulas for dyeing, printing, finishing and heat treating. Celanese Corp. of America, Textile Div., Marketing Dept., Box 1414, Charlotte, N. C.

R-442 Hycar Latices — Physical properties and typical fields of application. B. F. Goodrich Chemical Co.,

R-443 Sodium Hydrosulfite — Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

R-445 New Finishing Rolls — Money-saving facts about long-wearing, quality rolls. The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

R-446 Ethanolamines — Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-447 Nappers For Treating Any Fabrics — Complete details on Muller Tri-Napping Machine. Franz Muller, Monchen-Gladbach, Germany.

R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

R-449 Rotary Dyeing Machine—For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

R-452 Micro Switch For Wet Process — Advantages and applications in dyeing, bleaching, finishing. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

R-453 Complete Line Of Mathieson Chemicals — Covers organic, inorganic, specialty chemicals. Olin Mathieson Chemical Co., Industrial Chemicals Div., Baltimore 3, Md.

R-455 Aligning Lays—Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

R-456 Dyeing and Finishing Machinery — Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

R-457 Dyeing, Bleaching and Drying Equipment — Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

R-458 Napthol Ratios Slide Chart — Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

R-459 "PCB" Rock Salt — Tells how product saves money, eliminates bad dyeing. Morton Salt Co., Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

R-461 Wool Oils—Describes influence of wool oils in producing suality yarns and fabrics. Proctor & Gamble Dist. Co., Gwynne Bldg., Cincinnati, Ohio

R-462 Bleaching With Peroxygen Chemicals — Bleaching methods comprehensively treated. Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York.

R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

R-466 Penford Finishing Gums — Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-467 Regeneration Of Zeolite Water Softeners — Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

R-468 Dyeing Synthetic Fibers—Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-479 Naphthol for Lightfast Browns—Booklet describes new, straight, nonsubstantive naphthol, Naphthol AS-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-480 Softener, Lubricant, Napping Aid—Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

R-481 Handbook on Methocel—Gives technical information and use data on family of methylcellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

FIBERS AND YARNS

R-502 Fortisan-36, New Textile Fiber—Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns—Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

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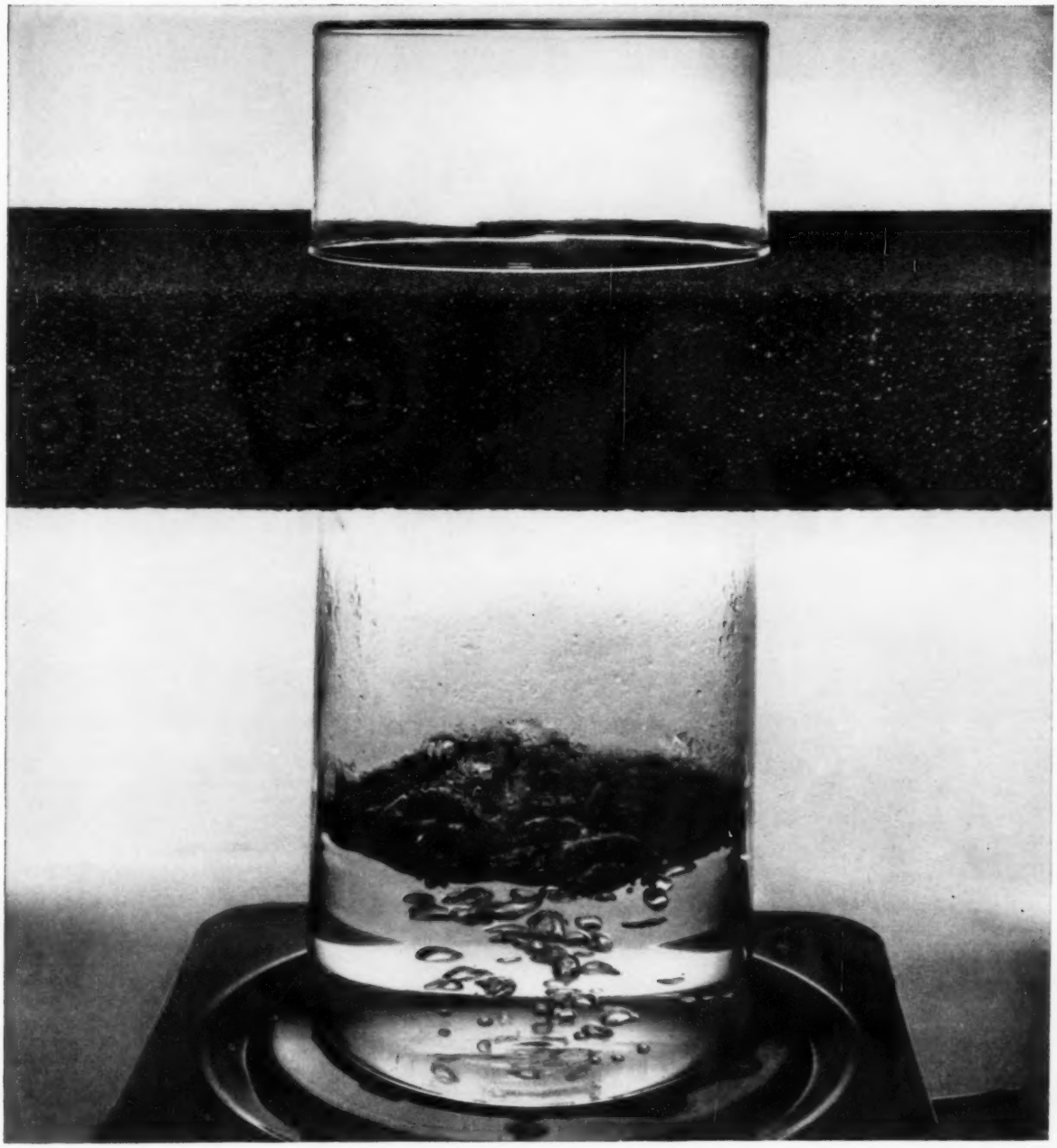

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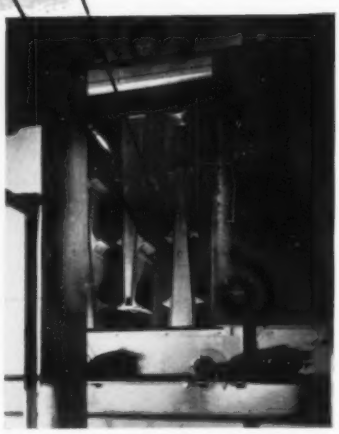

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R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

R-508 Color-Fast Fibers — Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

RESEARCH—TESTING—LABORATORY

R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-602 Metal Detector — Spot troublemakers before they harm equipment or fabrics. Radio Corp. of America., Dept. S-271, Building 15-1, Camden, N. J.

R-603 Shadograph Weighing Devices—Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

R-606 Strobotac — Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

R-607 Yarn Count Scale—Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn count number. Exact Weight Scale Co., Columbus, Ohio.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

What the TEXTILE MILLS are doing

(Continued from page 48)

An over-the-knee sheer seamless stretch stocking has been developed by **Hanes Hosiery Mills Co.,** Winston-Salem, N. C. Also placed on the market was the new Hanes XL type seamless with a full 36-inch length and a 13-inch stretch at the top, in sizes 11 and 12 for tall or stout women. * * * A packaging innovation now provides every box of Hanes stockings with a narrow transparent pull-tape seal, which must be pulled off before the box can be opened. Thus the retailer needs to check only the untaped boxes for inventory purposes.

Hazel Knitting Mills, Inc., Burlington, N. C., has purchased the Bellemont weaving plant of **Burlington Industries, Inc.,** in Burlington, N. C. The buyer plans to use the plant in connection with contemplated plans for increased knitting production.

The former **Abbot Worsted Co.** plant in Seneca, S. C., has been purchased by **The Kendall Co.** It is Kendall's 17th domestic plant and will be used for textile operations to streamline manufacturing and to provide additional production capacity. The acquisition fits into a long-range manufacturing program.

Production of men's hosiery and bobby socks has begun at **Lake Hosiery Mills, Inc.,** McBee, S. C. The

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Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

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What the TEXTILE MILLS are doing

new plant has 11 knitting machines in place, with 20 more scheduled to be added at an early date. In full operation, the firm is expected to turn out 1,000 to 1,200 dozen pairs of hosiery per week and will employ up to 20 people.

Mount Vernon Mills, Inc., has sold its Lawrence, Mass., duck mill to Max Gelman, owner of **Quality Mop & Brush Co.** Mr. Gelman plans to move his operation from Woburn to Lawrence.

Millcraft Weavers, Inc., Groveville, N. J., has been purchased by **Duratex Corp.,** a Philadelphia, Pa., producer of upholstery fabric. The New Jersey plant is being operated as **Duratex Mills, Inc.**

Patent has been granted to John E. Morgan, **J. E. Morgan Knitting Mills, Inc.,** Tamaqua, Pa., for a method of producing a lightweight knitted thermal fabric on circular rib machines with opposing needle housings. An air cell structure, formed by connecting vertical ribs with tuck stitches, is the principle feature of the fabric.

Morgan Cotton Mills has completed purchase of Mills No. 1 and 6 of **McColl (S. C.) Mills.** The yarn making machinery of Mill No. 1 was included in the sale, but only the building of Mill No. 6. The firm plans to operate Mill No. 1, but has not yet determined how Mill No. 6 will be used.

A new cotton-sole seamless stocking has been placed on the market by **Munsingwear, Inc.,** Minneapolis, Minn. A soft, fleecy cotton pad is knit into the stocking sole beginning at the toe of the stocking and extending over the ball of the foot. The insert is hidden from sight at all times, regardless of the type of shoe, and provides walking comfort and absorbency. * * * A new knit brief mill will be constructed by Munsingwear in Montgomery, Minn., which will almost treble the size of the existing facilities. Plans are for completion of the new plant by the end of the year.

Capitalization of the **Newberry (S. C.) Mills, Inc.,** has been increased from $1 million to $2 million. Further expansion of the mills is under consideration.

The **New London (Conn.) Textile Print Works, Inc.,** has moved to Waterford, Conn.

Paul Knitting Mills, Pulaski, Va., and **Hodges Knitting Mills, Inc.,** Milledgeville, Ga., will combine operations in October. Plans are for the manufacture of men's and boys' hosiery at the Milledgeville location while the finishing operation will be carried on in Pulaski. Named to head the combined operation was Norman K. Coker, vice-president and general manager of the Virginia firm.

Reeves Brothers, Inc., has completed the move of its New York City offices from 54 Worth St. to 1071 Avenue of the Americas.

Riegel Textile Corp. has organized a wholly-owned subsidiary in Trion, Ga., known as **Riegel Fiber Corp.** Its functions include all activities of the cotton purchasing division. * * * Riegel's data processing operations are being centralized at the southern executive offices in Ware Shoals, S. C. As part of the consolidation, many

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What the TEXTILE MILLS are doing

of the accounting departments will be moved from New York City to Ware Shoals.

Robertson Bleachery & Dye Works, New Milford, Conn., has been sold to a syndicate and reopened. A new corporation has been formed, known as **Robertson Bleachery, Inc.,** to operate the dyeing and finishing plant. It is believed that all 300 persons formerly employed with Robertson will be reemployed.

A seamless hosiery manufacturing division has been added to **Sandhurst Mills, Inc.,** Rockingham, N. C., and 24 seamless hosiery machines have been installed. The firm expects to reach full production by September. An estimated 10 to 15 persons will be added to the mill's personnel.

Production is scheduled to begin in September at the new Smyrna, Ga., plant of **Shamrock Knitting Mills, Inc.** Misses' socks will be the primary product of the new operation which will use between 50 and 70 machines during the initial production with expansion planned for a later date.

Spry and Watson Mills, Inc., have purchased property near Longview, N. C., a part of which will be used as the future location of the small dress fabric mill now operating in Granite Falls, N. C.

The Utica-Mohawk Division of **J. P. Stevens & Co., Inc.,** has begun deliveries to retailers of a line of "permanent, non-resin, no-iron" sheets and pillowcases. Stevens is reported to be the first firm in the sheet industry to be granted a license for the Belfast self-ironing process by the Deering Milliken Research Corp.

The Waverly Dyeing and Processing Co., Philadelphia, Pa., has been revamped to specialize in skein dyeing. The package dyeing operation has been eliminated.

Franklin Research Corp. has sold its Paul Whitin Manufacturing division, Gilbertville, Mass., to a new firm which will continue the yarn spinning business under the name of **Paul Whitin Corp.**

The Verdun Manufacturing Co. has moved all operations to Woonsocket, R. I., having closed the Somersworth, N. H., plant.

Personal NOTES ABOUT MEN YOU KNOW

Oscar Cate, representing Burlington Industries, was elected chairman of the cotton buyers' division of the South Carolina Textile Manufacturers' Association recently. **J. E. Rowan,** United Merchants and Manufacturers, Inc., Union, S. C., was elected vice-chairman.

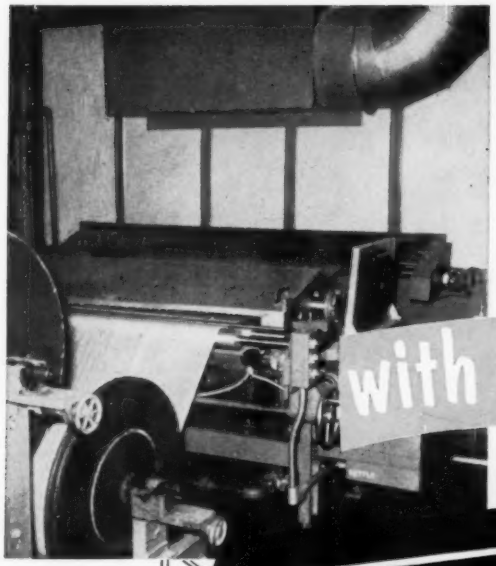
Edward H. Best & Co. has named **Robert Hoitt** manager of the firm's weaving plant in South Boston, Mass.

After more than 50 years of service, **George H. "Pop" Summerau** has retired from the Graniteville (S. C.) Co. At the time of his retirement, Mr. Summerau held the position of personnel director. He also originated the company's first safety programs.

James E. Hooper, Sr., has been elected president of William E. Hooper & Sons, Inc., Philadelphia, Pa., succeeding his father, the late Robert P. Hooper. The Hooper firm has been family owned since 1800.

The Midwest Woolen Manufacturers Association has elected **F. H. Orbison** of the Appleton (Wis.) Woolen Mills to serve as president for the coming year. Also elected were **Paul Benninghofen,** Shuler & Benninghofen, Hamilton, O., vice-president and **John Caron, Jr.,** Caron Spinning Co., Rochelle, Ill., secretary-treasurer.

Fulton Bag & Cotton Mills, Atlanta, Ga., has named **Howard M. Anderson** assistant superintendent. Mr. Anderson was formerly at the Rome, Ga., plant of Celanese Corp. of America. **C. H. Burns,** vice-president of finance, has been elected secretary-treasurer of the Controller's Institute of America, Atlanta Control. * * * **Marlin D. Sargent,** overseer of



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Personal NOTES ABOUT MEN YOU KNOW

spinning, has retired after 43 years of continuous service with Fulton Bag & Cotton Mills.

A. J. Eastwick (left) has been appointed data processing manager and **R. C. Mankiewicz** (right) has been

named chief programmer of The American Thread Co.'s newly-adopted automatic data processing system.

Charles Jeter Glenn has been promoted to head of technical services of Abbeville (S. C.) Mills Corp. and the worsted division. He will divide his time between the Johnston, McCormick, Excelsior Finishing (Clemson), and Abbeville plants.

Artloom Carpet Co., Philadelphia, Pa., has elected **Hyman Marcus** chairman of the board, succeeding **Herbert J. Adair** who resigned.

M. Lowenstein & Sons, Inc., has promoted **Henry L. Buchanan** to operations officer, with responsibility for coordinating manufacturing and sales of Huntsville (Ala.) Mfg. Co.; Covington (Ga.) Mills; Aleo Mills, Rockingham, N. C.; Spofford Mills, Wilmington, N. C.; and Limestone Manufacturing Co., Gaffney, S. C. **Roy L. Coffee** has assumed the same operations officer duties for Pacific Mills, Columbia, S. C.; Lyman (S. C.) Cotton Mills; and the Orr and Lyons divisions, Anderson, S. C. **Bill Allen,** chief of cost accounting, has been given the added duties of head of the planning department. **Johnny J. Lyons, Jr.,** has been named Mr. Allen's assistant.

Edgar K. Fitch, treasurer of Mt. Vernon Mills, Inc., Baltimore, Md., has retired after 38 years with the company.

A retired vice-president of Burlington Industries, **Grover C. Furr, Sr.,** has accepted a position as head of the North Carolina State Prison department's industrial program. He will

Mr. Clark
Avondale Mills

Mr. Wrigley
U. S. Rubber Co.

coordinate the industrial, agricultural, and forestry enterprises for the prisons.

Avondale Mills has placed **Harold Clark** in charge of the manufacture and sales of Plastavon, its non-woven fabric, replacing **Casius M. Stanley** who resigned. **Elvin T. Mizzell** is in charge of Plastavon manufacturing, reporting to Mr. Clark.

Leslie G. Wrigley has been appointed to the new position of sales manager of automotive sales for the textile division of United States Rubber Co. At the same time, **Benjamin E. Ferguson** was appointed to the new post of product development manager of automotive sales for the textile division. Both Mr. Wrigley and Mr. Ferguson will be located in the company's office in Detroit.

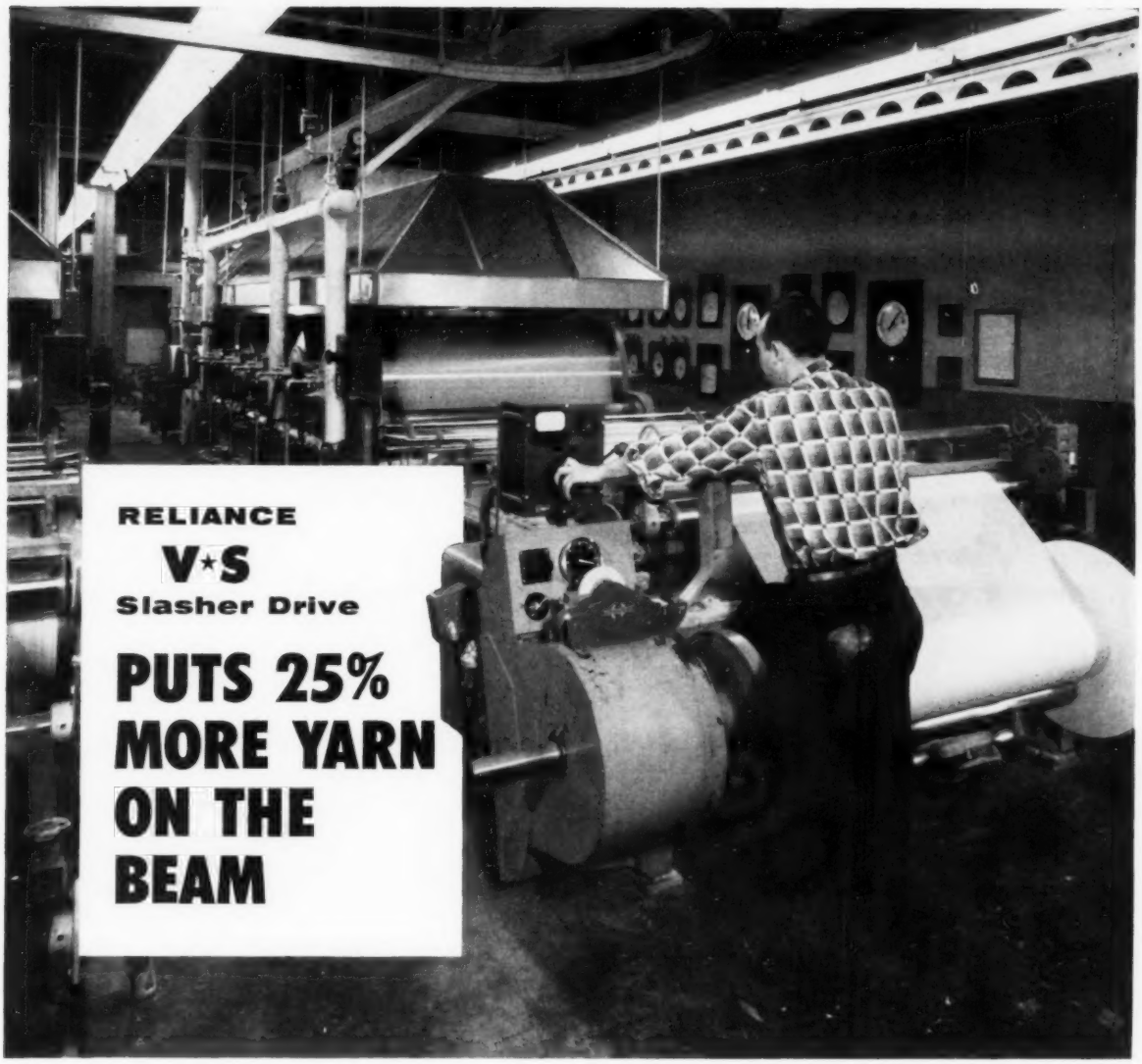
Cassius M. Stanley, Jr., has joined Dan River Mills, Inc., as superintendent of non-woven fabrics. He will make his headquarters in Danville, Va.

John G. Marshall, comptroller, and **J. L. Landauer,** traffic manager, have retired from Rock Hill Printing & Finishing Co. Mr. Marshall has been with the company since 1939, and Mr. Landauer joined the firm in 1933.

The Southern New England Textile Club has elected **Neil Pansey,** Pansey Weaving Mills, Inc., president. **George D. Flynn, Jr.,** was named first vice-president. Moving up to second vice-president was **Robert C. Ashworth, Jr.,** Ashworth Brothers. **Alexander Stewart,** Berkshire Hathaway, Inc., was named third vice-president.

Standard Yarn Mills, Glendale, N. Y., has named **Alvin Nadel** president succeeding **Henry Rosenblatt** who is now chairman of the board. **Bernard Rosenblatt** has been appointed vice-president.

George P. McClenaghan, vice-president and director of J. P. Stevens & Co., Inc., has been appointed a member of the executive committee



RELIANCE V★S Slasher Drives give you exacting tension control. Yarn tension is uniform from empty to full beam.

Uniform tension adds to weave room efficiency and also puts more yarn on each beam. A leading textile mill finds it can put 25% more fine count cottons on a beam with their new Reliance powered slasher.

Tension is accurately maintained through the whole speed range of the slasher, 4 to 140 ypm. Ends are handled gently with cushion starting and stopping. Put more productivity into *your* sizing operation by specifying Reliance as your next slasher drive.

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Mills know the costly penalty of rusty yarn racks—and the high cost of replacement.

Your old racks can be made like new at a fraction of their original cost—simply by having them hot-dip galvanized.

Dixisteel Hot-Dip Galvanizing meets ASTM specifications. Small, tight spangles—smooth, uniformly heavy coats of zinc, without burrs or fins—assure complete satisfaction and positive protection against rust and corrosion.

Many textile equipment manufacturers and mills use our facilities to hot-dip galvanize racks, card holders, bobbin transports, pirn and pin trucks.

Find out how little it will cost to re-galvanize your equipment. Send complete description and dimensions for a free estimate without obligation.

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Personal NOTES ABOUT MEN YOU KNOW

of the company. He is in charge of the cotton division which comprises seventeen plants located in North and South Carolina. * * * **S. R. DuBose** has been named personnel director of the Whitmire, S. C., plant. He succeeds **Nat S. Welch** who resigned to accept another position.

Malcolm E. Campbell, dean, School of Textiles, North Carolina State College, Raleigh, N. C., has been awarded a diploma of fellowship by the Textile Institute, Manchester, England.

The Lehigh Valley Textile Manufacturers Association has elected as president **William J. Evrard** of Wenstep Mills. Other officers elected were **John Zartler,** Schlegel Bros., vice-president; **Robert Schlegel,** Silk Fabrics, Inc., secretary; and **William Canova,** Canova Bros. Silk Co., treasurer.

Two additional collaborators have been named for the Cotton Mechanical Laboratory of the Southern Utilization Research and Development division of the Agricultural Research Service, USDA, New Orleans, La. They are **Louis L. Jones, Jr.,** president of Canton (Ga.) Cotton Mills and **J. Joseph Lyons,** executive vice-president of M. Lowenstein & Sons, Inc., Anderson, S. C. Seen here at a recent meeting are the textile industry advisors for the laboratory. They are (seated, l. to r.): Mr. Lyons; **Richard H. Tuttle,** director of research, Fieldcrest Mills; Mr. Jones; and **Carl R. Harris,** vice-president, Erwin Mills, Inc. Standing is **R. J. Cheatham,** chief of the Cotton Mechanical Processing Laboratory.

Whisnant Hosiery Mills, Inc., Hickory, N. C., has promoted **Dee B. Nichols** to first vice-president. He succeeds **Harrison J. Williams** who has resigned.

The Greenville, S. C., Chapter, Society for Advancement of Management, has honored two mill executives. Chosen to receive the chapter's "Outstanding Citizen" awards were **Robert T. Stevens,** president of J. P. Stevens & Co., Inc., and **Roger Milliken,** president of Deering, Milliken & Co., Inc. The awards will be presented at a banquet on October 8. This will be the first time a dual presentation has been made.

Karl H. Helfrich has resigned as vice-president and secretary of Forstmann Woolen Co.

Louie M. Saxon has joined Hyde Park Mills, Inc., Covington, Tenn., as general overseer of carding and spinning, day shift.

James Lees & Sons Co., Bridgeport, Pa., has named **William A. Drisler, Jr.,** a vice-president and assistant to the president. He was formerly vice-president in charge of the hosiery division of Cannon Mills, Inc.

Henry A. Millis, Jr., has accepted a position as assistant to the head of Burlington Hosiery Co. He will be working from headquarters in New York City and Asheboro, N. C., as assistant to Herbert Kaiser.

Thomas F. Connell has resigned his position as manager of the Burlington, N. C., plant of Celanese Corp. of

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Originators of **SUPR-O-TAPE • SUPR-O-BAND • STRIP-O-MATIC • MICR-O-GRIND**

MANUFACTURERS OF QUALITY CARD CLOTHING SINCE 1892

REDUCE YOUR NEP COUNT! WITH MICR-O-GRIND*

CARD CLOTHING

*Pat. Pending

MILL TESTS SHOW:

Nep count reduced 40%

Blending improved substantially

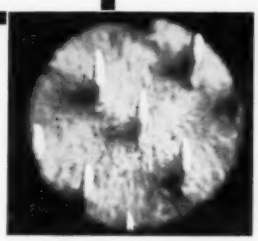
Yarn strength up 10%

Grinding 80% less frequent

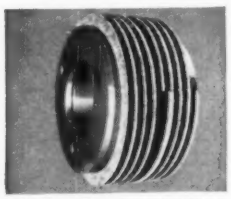
Grinding time less than 30 minutes (normal 6-8 hours)

Stripping 65% less frequent

Booth card clothing may now be obtained with a **new and exclusive** extra sharp needle point. With your first purchase of this new clothing, the MICR-O-GRIND head is available for rent so that you can regrind it yourself.



Note needle point from MICR-O-GRIND (left) compared with conventional flat point (right). Extra sharp MICR-O-GRIND points card out the neps and reduce the nep count as much as 40% on cotton. Sharper points also allow stock to release itself—hence less loading—and also give greatly improved carding action. Stripping of cotton cards only once a shift—on woolen cards as little as once a month.



Grinding discs are spiraled to take off the heel of each tooth. MICR-O-GRIND head fits your conventional grinding shaft.

HOW IT WORKS

MICR-O-GRIND card clothing is ground with spiral abrasive discs that take the heel off the wire. Accuracy of initial grind is assured by exclusive Booth electronic monitor controls. This leaves a needle-like point, long recognized as ideal for card clothing. *Never before has this ideal been attained.* Conventional grinding invariably leaves a flat point because no way was known to grind the teeth to a perfect point.

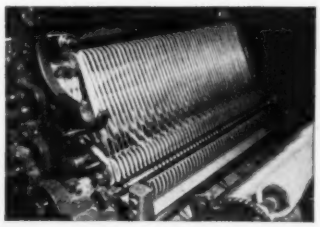
IMPROVED QUALITY

The needle point of the teeth holds the fibres long enough to be thoroughly carded and yet does not tear the fibres. This provides a more gentle combing action for increased yarn strength, better blending and reduces neps by as much as 40% in cotton carding.

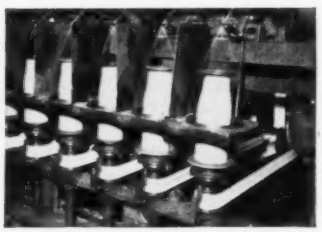
Needle point is smooth enough to release the stock easily, yet the fine serrations (as seen under a microscope) will not let the fibres escape without being carded. This also means that there is less beating action at the doffer comb as the web flows more readily off the card.

REDUCED COSTS

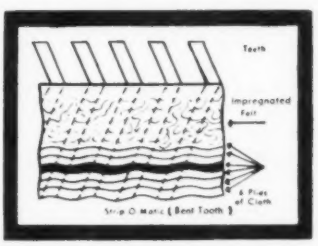
through reduced Down Time for grinding and stripping. MICR-O-GRIND clothing is very inexpensive—only 5% more. The MICR-O-GRIND needle point can be applied to any type of card clothing—the only difference is the point. In a cotton mill, you can get your standard 100's, 110's, etc., in either CCWC, CWC or rubberfaced foundation—also any woolen clothing.



SUPR-O-TAPE—the new proven condenser tape for longer life—improved roving—no stretch—no cracking—no need to oil—no dropped ends—holds square edges indefinitely.



SUPR-O-BAND—a new banding for spindle drives on twisting, roving and spinning frames for longer life—high friction surface—rough, rugged construction—positive drive—LINT FREE.



STRIP-O-MATIC—clothing greatly reduces stripping waste, down time and costs.

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Personal NOTES ABOUT MEN YOU KNOW

America, to accept a post as general manager and director of Palatine Dyeing Co., Inc., St. Johnsville, N. C. **Frank B. Cameron** succeeds Mr. Connell.

Malcolm D. Link has been appointed superintendent of The Goodyear Tire & Rubber Co. textile mill

Mr. Link

Mr. Beggs

at Rockmart, Ga. He replaces **P. W. Beggs,** who has retired after serving 38 years with Goodyear.

George Bernat, Garland Knitting Mills, Jamaica Plain, Mass., has been elected president of the New England Knitted Outerwear Manufacturers Association. **Robert L. Nields,** Ware (Mass.) Knitters, Inc., was elected first vice-president, and **Joseph Emple,** Emple Knitting Mills, Bangor, Me., was chosen second vice-president.

Catawba College has conferred an honorary Doctor of Laws degree on **Julian Robertson,** president of Erlanger Mills, Inc., Lexington, N. C.

Ed Lipscomb, public relations director of the National Cotton Council of America, has been elected president of the International Public Relations Association. Mr. Lipscomb is the first American to hold that office. He resides in Memphis, Tenn.

Leslie B. Coombs, president of Bradford Durfee College of Technology, Fall River, Mass., has retired after serving the college for 24 years. He is succeeded by **William J. Holland.**

The Greensboro (N. C.) Civitan Club has named **J. C. Cowan, Jr.,** vice-president of Burlington Industries, Inc., as the city's "Outstanding Man of the Year."

Canadian Cottons, Ltd., Montreal, Canada, has named **D. R. Gormley** executive vice-president. At the same time, **H. E. Purcell** was appointed vice-president, sales, and **E. J. Winters,** controller, was made secretary-treasurer.

The office executives division of the Cotton Manufacturers Association of Georgia has elected **H. A. Fuller,** treasurer of Swift Manufacturing Co., Columbus, Ga., as chairman. **Floyd R. Cooper,** secretary-treasurer of Canton (Ga.) Cotton Mills, was elected vice-chairman.

Sydney M. Cone, Jr., has been named president of Cone Mills Corp.'s newly-created finishing division. He has appointed **P. C. Gregory, Jr.,** as executive vice-president with direct supervision of operations at the Proximity Print Works, Greensboro, N. C.; the Granite Finishing Co., Haw River, N. C.; the Carlisle (S. C.) Finishing Co.; and Union Bleachery, Greenville, S. C.; as well as the finishing division sales office in New York City. **Marshall Gardner,**

Mr. Gregory

Mr. Gardner

Mr. Cone

Mr. England

Mr. Jones

Greensboro, N. C.; **Leonard England,** Greenville, S. C.; and **E. E. Jones,** Carlisle, S. C., have been named vice-presidents of the division.

E. I. du Pont de Nemours & Co., Inc., has appointed **Fred E. Walter** manager of the Parlin, N. J., finishing plant. **Robert H. Bell,** former Parlin manager, has been appointed manager of the Newburgh, N. Y., plant, and **Alfred J. Jennings** was named manager at Fairfield, Conn. **Charles C. Quenelle,** former Fairfield manager, has been appointed staff assistant to the fabrics division manager in Wilmington, Del.

Show Week in Greenville
October 6 - 10

See TI's October issue for a complete preview

Clemson (S. C.) College School of Textiles has announced promotion of three faculty members. **T. A. Campbell, Jr.,** has been promoted to full professor of textiles, **Dr. W. T. Rainey** has been promoted to full professor of textile chemistry, and **J. L. Thompson** has been promoted to associate professor of yarn manufacturing.

OBITUARIES

Samuel Yates Austin, 81, retired textile mill executive, Scarsdale, N. Y.

Robert L. Calvert, 57, assistant superintendent of Chiquola Mfg. Co., Honea Path, S. C.

John W. Crawford, 65, retired textile mill executive, Franklin, N. H.

John Hastings Cutter, 79, retired textile executive, Charlotte, N. C.

Joseph E. Duval, 67, retired textile executive, Philadelphia, Pa.

Alban Eavenson, 88, retired textile executive, Philadelphia, Pa.

Saul Effenberg, 55, retired president of Diamond Knitting Mills, Inc., Ventnor, N. J.

Roy A. Hall, 43, superintendent of Van Raalte Co.'s plant, Bryson City, N. C.

Robert P. Hooper, 86, president of William E. Hooper & Sons, Inc., Philadelphia, Pa.

William H. Miller, 60, retired textile mill executive, North Haven, L. I., N. Y.

W. Ronald Scott, principal of W. Ronald Scott Yarn Co., Greenwich, Conn.

Harry R. Spaulding, 83, retired textile mill executive, Ashland, N. H.

Thomas Love Witherspoon, co-owner of Viewmont Hosiery Mill, Hickory, N. C.

Needle felting *(from page 118)*

lar schedule for replacing worn and broken needles in the boards. All needles are removed from the first third of the board and replaced by new ones. The good needles removed from this section, which are only partially worn, are placed in the center section. Those taken from the center section are inserted in the last third section.

This method of reneedling boards greatly lengthens the use life of the needles while producing a smoother, more uniform felted product. Another economy practice that is possible with many kinds of felting is to adjust the bed of the loom to such height that only the end barbs of the needle penetrate the worked material. As these barbs become worn off, the bed is raised sufficiently to utilize the next row of barbs, and so on until the needle becomes worn throughout its length.

The life of felting needles depends upon many factors, i.e., type of material being felted, thickness and density of the finished product, amount of needle hole wear in the boards, straightness of the holes, needle straightness, and construction and temper of the needles. Chrome plated needles wear considerably longer than a standard steel needle, although the added cost of chrome plating can seldom be justified unless the wear factor greatly exceeds the breakage factor. Chrome plating will neither increase nor decrease the incidence of breakage.

An accompanying illustration shows a single blade felting needle and notes the nomenclature used in describing the various elements.

Needles are classified by gauge sizes, gauge numbers being used for the diameters of the shank, blades, and triangular blade section. The first number in the gauge size of the needle is the wire size from which the needle is made.

Gauge	Wire Size, In.
9	0.140
10½	0.121
11	0.110
12	0.105
13	0.0925
13½	0.085
14	0.080
15	0.072
15½	0.068
16	0.064
17	0.055
17½	0.052
18	0.0475
20	0.037

Improved techniques, new fibers, and greater knowledge of needle felt manufacture and use will produce tailor-made felts that fit close requirement specifications.

OVER 30 YEARS OF "GOOD BREEDING" HAS PRODUCED MAXIMUM DESIZING EFFICIENCY AT HIGH TEMPERATURES IN RAPIDASE® FOR DESIZING

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Enzymologists to American Industry
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NOW AVAILABLE
the new, most concentrated liquid
RAPIDASE-800
for maximum economy in shipping and storage where a liquid desizer is preferred
also: RAPIDASE 2M
RAPIDASE CONCENTRATED
RAPIDASE M
RAPIDASE
and the extra-convenient powdered product RAPIDASE-Z, in drums or in precision-packed 2-oz. and 8-oz. moisture-proof envelopes.

SUPPLIERS News

WHAT THEY ARE DOING

Albert G. Matamoros has been named general manager of the office of economic and marketing research recently established by the **Armstrong Cork Co.** Other personnel assigned to the new office include William J. Watkins, who was appointed manager of marketing research; Gray Playter, manager of advertising research; and Warren J. Wittreich, marketing research psychologist.

Curtis & Marble Machine Co. has purchased the assets of the instrument division of the Barbour Stockwell Co. The new acquisition, which manufactures tachometers, adapters, actuators, gear boxes, flexible shafts, etc., will operate as a separate division and will be designated **Barbour Stockwell Instruments.** Plans are for an augmented management to accelerate activities in the new instruments division, which, for the present, will continue its operation in Cambridge, Mass.

General Latex & Chemical Corp. has begun negotiations for the construction of a new plant in Charlotte, N. C. The proposed plant will serve the textile industry in the tri-state area of North and South Carolina and Virginia.

Union Bleachery, Carlisle Finishing Co., and **Proximity Print Works** have leased space for a new sales office at 111 W. 40th St., New York City. They were formerly located at 1430 Broadway.

The Franklin Process Co., a division of Indian Head Mills, has opened a sales office in Providence, R. I. Willard Gardner and Robert S. Allen are in the Providence office and will service customers in New England.

Hart Products Corp. has appointed Milton J. Greene director of the newly expanded textile resin division. Thomas H. Hart has been named director of customer service and sales research for the marketing of the company's new mothproofing agent, "Larvatex."

Industrial Rayon Corp. and Spencer Chemical Co. have formed the Ohio River Chemical Co. for the manufacture of caprolactam, a basic raw material used in the production of nylon.

William L. Triplett has been appointed to the customer service technical staff of the chemicals and dyestuffs division, **Koppers Co., Inc.** He will be available to offer technical assistance to textile mills throughout the South, and will act as consultant to customers of the firm, particularly in matters pertaining to synthetic fibers.

Joseph F. Taylor has accepted an executive position with the V-drive sales division of **Maurey Manufacturing Corp.** He was previously manager of V-belt sales with Goodyear Tire & Rubber Co.

Nopco Chemical Co. and its subsidiary **Metasap Chemical Co.** have moved into new general offices at 60 Park Pl., Newark, N. J.

William A. Baltzell has been appointed industrial sales manager for **Oakite Products, Inc.** He will be responsible for the work of the company's 17 division and 240 technical service representatives in the United States and Canada. J. Justin Basch has been appointed to the new position of marketing vice-president. He will be responsible for sales, engineering, advertising, and marketing research.

Robert H. Griffith has been appointed to represent **Ralph Gossett & Co.** on metallic yarns produced by **Nylco Products Co.** His territory will include Georgia, Alabama, and Tennessee.

George H. Waterman has announced the formation of a yarn selling agency. Designated **Waterman, Merrill, Largen & Co., Inc.,** the firm operates under a Rhode Island charter and represents mills on an exclusive basis throughout the country. The firm will offer yarns from all natural and synthetic fibers.

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. . . With The Famous No. 79
AUTOMATIC QUILL POLISHER

—protects product quality by preventing damage to fabrics and delicate filaments due to rough quills and broken picks. Cleans, buffs, and polishes loom bobbins at speeds up to 40 pieces per minute.

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SPECIAL FINISHING MACHINES SINCE 1890

Mr. Kleinman
Whiting Corp.

Mr. Lavender
Putnam Chemical

Dr. Killinger

Mr. Anderson
Penick & Ford, Ltd., Inc.

Mr. Taws
Fletcher Works

Mr. Leddy
Geigy Chemical

George Kleinman has been transferred to the Charlotte, N. C., district office of the **Whiting Corp.**

Dr. J. E. Killinger has been appointed director of technical sales service and field development of **Penick & Ford, Ltd., Inc.** G. M. Anderson is the new assistant director of technical sales service for the textile division.

William B. Lavender has joined **Putnam Chemical Corp.** as a member of the firm's southern sales staff.

Edward T. (Ted) Taws, Jr., has been appointed to the position of vice-president in charge of the textile division of **The Fletcher Works, Inc.** He replaces Jack Harrison who resigned to join Quality Weaving in Philadelphia.

John A. Leddy has accepted a position with **Geigy Dyestuffs,** division of Geigy Chemical Corp. He is in charge of application research with particular emphasis on synthetic fiber dyeing and finishing at the new Ardsley, N. Y., laboratories.

Technical representative D. Wallace Enright has been transferred to the Charlotte district of **Union Carbide Chemical Co.,** div. of Union Carbide Corp. * * * Peter G. Rotko has joined the staff of the Textile Fibers Department. His duties will include advertising and sales promotion of current and developmental end uses of dynel. He will headquarter in the fibers office in New York City.

Instron Engineering Corp. has moved to a new, modern plant in Canton, Mass. The new building is designed to facilitate maximum production flow, and provisions have been made for future expansion when desired. * * * E. J. Tolle has accepted a position as sales manager at Instron's new Canton, Mass., headquarters.

Construction has begun on a new building to house the New Orleans

Announcing the MOST POWERFUL LOW-COST textile magnet you can use!

New, NON-ELECTRIC SPIKED APRON MAGNET from Eriez improves product quality, reduces direct labor and maintenance costs, increases plant safety.

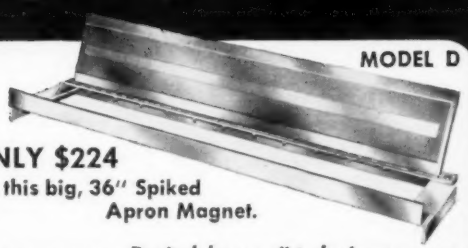
Here's *positive protection* at a price every budget can stand! Designed and produced by Eriez—*leader* in magnetic equipment for the textile industry—this new Spiked Apron Magnet will protect carding and garneting equipment from damage by tramp iron; prevent fires, machinery damage and costly down time. And it's priced so low you can't afford to be without it!

Nine out of ten mills specify "ERIEZ" magnetic separators when they order—and with good reason. No other manufacturer has the years of magnetic experience, the know-how or the skilled field and laboratory staffs that Eriez has. No other manufacturer has solved as many magnetic problems for the industry. Eriez Spiked Apron Magnets are available direct or through your original equipment manufacturer—and there's always an Eriez sales engineer nearby to serve your needs.

CHECK THESE FEATURES:

Completely non-electric units; no operating or maintenance costs; first cost is the only cost. Magnetic strength is guaranteed indefinitely. Units are self-contained; quickly and easily installed.

ERIEZ Try one of these dependable magnets on a FREE 30-DAY TRIAL No obligation.



MODEL D

ONLY $224
for this big, 36" Spiked Apron Magnet.

Don't delay; mail today!

Eriez Mfg. Co.,
721 Magnet Drive, Erie, Pa.

ERIEZ HI-POWR MAGNETIC SEPARATORS

( ) Please mail more information on the Model D magnet
( ) Please have your representative call
( ) Please send a magnet for 30 day free trial

*The inside dimension of our feeder is*_____

Name_____
Company_____
Address_____
City_____ State_____

PERFECT PRINTING TEAM

Jenkins' METLKOR Furnisher Brushes, developed for Rice Barton printing machines, perform to the highest levels of reliability. They supply color efficiently and clean thoroughly the deepest or shallowest engravings.

Arrow points to Jenkins' METLKOR Furnisher Brush.

Jenkins' METLKOR Nylon Furnisher Brush.

One of four types.

Jake Nieman, Boss Printer of Manhattan Print Works Division of Waldrich Co., Passaic, N. J., one of the first to try these superior brushes, says, "We have been using Jenkins' METLKOR Furnisher Brushes in our Rice Barton printing machines for nearly 20 years. They measure up to the high standards we have set for the quality work we do."

In addition to a complete line of brushes for printers, Jenkins' also makes brushes for: Shears, Carbonizers, Singers, Tenter Frames and all other Textile Wet and Dry Finishing Processes.

Specify Jenkins' METLKOR
the original . . . the best *Metal* Core brush

METLKOR®
CYLINDER BRUSHES
and **LIFEWOOD®** WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.
Serving Industry for Over 80 Years
632 Pompton Ave., Cedar Grove
Essex County, N. J. • CEnter 9-5150

SUPPLIERS News
WHAT THEY ARE DOING

branch of **The Selig Co.** The new building will contain more than 10,000 sq ft of floor space with modern warehousing, packing, and loading facilities. It will be ready for occupancy about October 1.

Narda Ultrasonics Corp. has formed a chemical process division. Dr. Bernard Schmidt has been named to head the new division.

Lovejoy Flexible Coupling Co. has acquired controlling interest in **Hi-Lo Manufacturing Co.** Hi-Lo Manufacturing, successor to Equipment Engineering Co., will continue operations in Minneapolis, Minn., under the presidency of V. G. Nordley, son of the founder.

A new $3 million technical center has been completed by **Atlas Powder Co.,** at the company headquarters in suburban Wilmington, Del. It houses the company's basic research and chemical product development activities.

Whitin Machine Works announces the following new machinery orders and new mill installations: Bartex Spinning Co., Clayton, N. C., has purchased three Inter-Draft roving frames and are modernizing 39 spinning frames with the application of Unitrol. * * * Bates Manufacturing Co., Bates Div., Lewiston, Me., has installed four Whitin-Schweiter Fill-Master winders and a bobbin loader. * * * Berryton (Ga.) Mills has installed 32 Superflex spinning frames with a total of 8,064 spindles. * * * Bladenboro (N. C.) Cotton Mills, Inc., is installing four Hi-Pro roving frames, 64 deliveries of Even-Draft drawing, and is modernizing 27 spinning frames with the application of Super-Draft; also, an Axi-Flo cleaner has been installed. * * * Erlanger Mills, Inc., Lexington, N. C., is modernizing 45 spinning frames with the application of Super-Draft, involving a total of 10,224 spindles. * * * Exposition Cotton Mills Co., Atlanta, Ga., has installed two Axi-Flo Cleaners, two cage sections, and two return air condensers. * * * Fieldcrest Mills, Inc., Towel Mill, Fielddale, Va., has installed 16 deliveries of Even-Draft drawing, bringing the total to 96 deliveries. * * * Fitchburg (Mass.) Yarn Co. has installed four Pacemaker twisters. * * * Ivey Weavers, Inc., Hickory, N. C., has installed two 15-spindle Whitin-Schweiter Fill-Master winders. * * * Frank Ix & Sons Virginia Corp., Charlottesville, Va., has installed two Speed-Matic filling bobbin winders. * * * Leward Cotton Mills, Worthville, N. C., has installed three Even-Draft drawing frames and 26 Superflex spinning frames with a total of 6,760 spindles. * * * Mauney Mills, Inc., Kings Mountain, N. C., is modernizing 48 spinning frames by increasing ring size and lengthening traverses. * * * Reeves Brothers, Inc., has converted 22 Model J combers to Model Super J and installed an Even-Draft drawing frame. Axi-Flo cleaners have been installed at the Mills Mill No. 2, Woodruff, S. C., and Mills Mill, Saxon div., Spartanburg, S. C. * * * Superior Yarn Mills, Mount Holly, N. C., is modernizing 40 spinning frames with the application of Super-Draft involving a total of 9,840 spindles. * * * Axi-Flo cleaners have been installed in the following mills: Chiquola Mfg. Co., Honea Path, S. C.; Arcadia Mills, Rock Hill, S. C., and Tallassee (Ala.) Mills (both of Mount Vernon Mills, Inc.); Spray (N. C.) Cotton Mills; R. W. Gould, Inc., Danielson, Conn.; Habersham (Ga.) Mills; Opp (Ala.) Mills; Micolas Cotton Mills, Opp, Ala.; and the Mollohon, Addison, Wateree, and Oakland plants of The Kendall Co., Cotton Mills Div., Charlotte, N. C.

Paul J. Fountain has been promoted to manager of stainless steel sales for the Boston plant of **Joseph T. Ryerson & Son, Inc.** He replaces Philip B. Van Horne who becomes consultant, stainless sales.

Sealol Winders, Inc., newly formed subsidiary of Sealol Corp., has announced that it has obtained exclusive rights to manufacture and sell Temco winders which feature automatic control to provide constant tension. G. Duncan Briggs has been named manager of the division.

H. L. Prescott has been named manager of the Greenville, S. C., branch of the **Square D Co.** * * * Mitchell P. Kartalia has been appointed general manager of the marketing division. He will make his headquarters in the Detroit executive offices.

Sun Chemical Corp. has purchased **Coating Material Laboratories,** manufacturers of specialty finishes for the textile and other industries.

American-Marietta Co. has acquired the business of **Southern Dyestuff Corp.,** a producer of sulfur dyes.

Mr. Workman
Goodyear

Mr. Casserly
Wallerstein Co.

Mr. Byrne

Mr. Wright
U. S. Rubber Co.

Mr. Dunham
Continental Can

Mr. Deaver
Trust Co. of Ga.

Theodore Byrne and George Wright have joined the sales staff of the textile division of **United States Rubber Co.** As representatives in the sale of yarns, Mr. Byrne will service New York City and New England, and Mr. Wright will service New York City.

Robert E. Workman has been appointed to the newly created post of assistant general manager of the Goodyear Chemical division of **Goodyear Tire & Rubber Co.**

Edgar W. Dunham, Jr., has been appointed special sales representative to the textile and allied soft goods industry for the Shellmar-Betner Flexible Packaging Division of **Continental Can Co.** He will make his headquarters in Shellmar-Betner's New York City sales office.

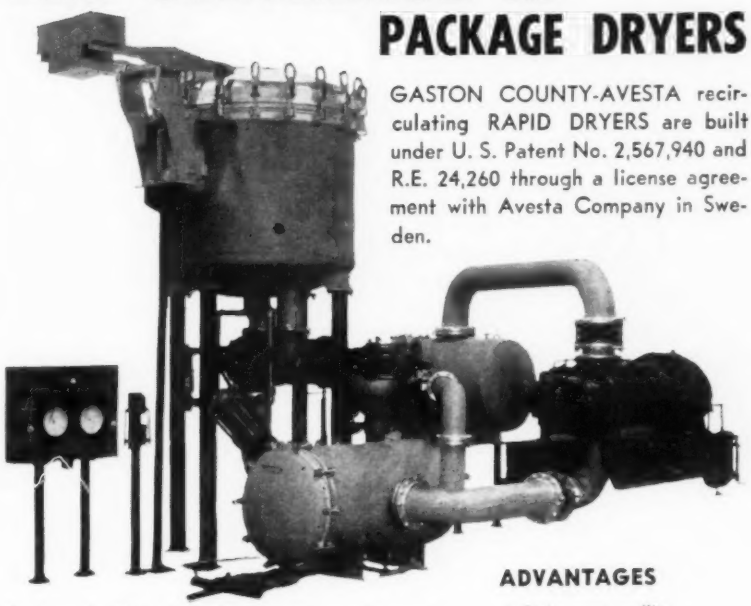
The **Wallerstein Co., Inc.,** has named James Casserly sales manager of the textile division. He succeeds J. Andrew Clark, who becomes technical director for the division.

Frank M. Deaver, Jr., has been promoted to assistant treasurer of the factoring department of the **Trust Co. of Ga.,** Atlanta, Ga. He is in charge of the new business activities of the department in the entire southeastern territory.

Charles W. Parker, Jr., has been named to the new position of director of sales promotion in the Industries Divisions of **Allis Chalmers Mfg. Co.** A. R. Tofte is manager of the publications and industrial press department, and J. W. Murphy is manager of the advertising department. Both of the latter departments are included in the new organizational setup. * * * The Industries Group has appointed Ralph L. Haney manager of the Philadelphia district and Charles E. Dandois manager of the Allentown, Pa., district. * * * William Morrison has been assigned as sales representative to the Charlotte, N. C., district office of the firm's Industries Divisions.

Construction has begun on a new folding carton plant for **Container Corp. of America** in the new Dallas/Ft. Worth industrial district.

The ULTIMATE in PACKAGE DRYERS



GASTON COUNTY-AVESTA recirculating RAPID DRYERS are built under U. S. Patent No. 2,567,940 and R.E. 24,260 through a license agreement with Avesta Company in Sweden.

Custom built to individual mill requirements in "Single Kier" or "Multiple Kier" arrangements for 250 to 1,000 or more pounds of yarn. Design determined by package carriers in customer's plant regardless of make.

CONSTRUCTION

Built to ASME standards. Piping systems, heater housings, condenser housings, reversing valves and drying kiers made of stainless steel. Kier lid of stainless or carbon steel as specified.

Heater and condenser coils made of heavy curpo-nickel alloy tubing for long service life.

Send for detailed technical data and drying cycles based on your production.

ADVANTAGES

1. Better yarn quality
2. Short drying cycles
3. Completely automatic operation
4. Low labor costs
5. Low power consumption
6. Low steam consumption
7. Eliminates costly air filters
8. No contamination from atmosphere
9. Eliminates expulsion of hot air into dyehouse
10. Allows more efficient use of package carriers
11. Accelerates flow of material through dyehouse
12. Faster delivery of finished product to customer
13. Allows smaller inventory of finished goods
14. Reduces overall costs of dyehouse operation

GASTON COUNTY DYEING MACHINE CO.

Pioneers In Automatically Controlled Dyeing Machinery

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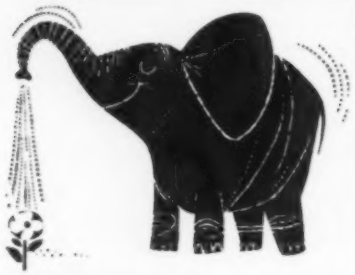

LOOKING FOR SOMETHING See BIG?

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MEADOWS MANUFACTURING CO.
ATLANTA, GA.

AVOID

SPINNING ROOM DISRUPTION!

There are many, many reasons and causes for machine failure presenting the costly problem of "Down-time". Some of these every day problems are unforeseen - - - BUT

the foresight of . . .
ANDERSON SHIELDS
will reduce . . .
CHIPPING — SPLITTING
BREAKING
of your . . .
SPOOLS AND BOBBINS

TEXTILE SHIELD CO., INC.
LAWRENCE, MASS., U. S. A.

AN EXECUTIVE Views
THE NEWS IN TEXTILES

(Continued from page 71)

but in which we will not insist on calling the ups, downs. That is what we have been doing when a level which is really too high is generally called too low.

WE ARE in our present pickle largely because of government meddling with routine economic problems.

This magazine pointed out more than 20 years ago that if wages were going to be controlled by politics instead of economics there was no sense in having a 30 cents an hour minimum wage in the textile industry. We might as well call it one dollar and be done with it, because it would only be a question of time until it would be a dollar, so why put off that happy day for several years. We may have seemed visionary 20 years ago in predicting a dollar an hour minimum in the textile industry, but now we have it, and practically nobody is happy with it.

The rule of competition is a hard rule, but a fair one if the competition is open and honest, and it is a reasonable function of government to see that it is. The prevention of cutthroat competition, engaged in for the purpose of destroying competitors and creating monopolies, is a normal police function of the state.

Most of our economic problems today are the result of refusal to let a recession recede until it had found its logical economic level. We had gone below this level in 1932, and were on the way back to a higher plateau on which we could have done business profitably for many years, if ill-advised politicians had not decided to throw the country to the inflationary wolves, so that the cost of living, which should have constantly gone down for the last 25 years, has almost constantly gone up, and all nominally fixed values have steadily depreciated.

The people who bought government bonds, nominally the most solidly fixed of all values, and who have had them for about 15 years, have now got only half as much as they bought.

There is little disposition in the national government to do anything about this state of affairs except to make it worse.

CLASSIFIED

BOBBINS—BOBBINS—BOBBINS

Our specialty is good used automatic loom bobbins. We also deal in twister and roving bobbins. Send us samples of what you need or what surplus bobbins you have.

CHARLES G. STOVER COMPANY
West Point, Georgia

WEAVE ROOM

Man is interested in a Southern location. Has loomfixer, head fixer, trouble shooting, and supervisory experience. Would be interested in any of the above positions, preferably where there is an opportunity for advancement. Cotton, synthetic, blends, all types of fabrics and looms. Reply to Box 38, Textile Industries, 806 Peachtree Street, N.E., Atlanta 8, Georgia.

Technical Sales Representative

Synthetic fiber manufacturer needs man with knowledge of the fiber, yarn, and fabric fields for product and sales development. Experience in product development and technical services necessary. Degree in Textile Engineering preferable but not essential. Salary open. Send complete resume to: Box 39, Textile Industries, 806 Peachtree Street, N.E., Atlanta 8, Ga.

"Wanted Job as salesman of textile machinery parts or supplies. Twelve years as cotton mill superintendent. At present and for past two years salesman covering six states selling to mill supply houses and jobbers. Also calling on Industry. Not married can take any territory. Must have expenses, 8 cents per car mileage. Salary not less than $150 per week and possible commission."

REPLY TO BOX 36, TEXTILE INDUSTRIES, 806 Peachtree Street N.E. Atlanta 8, Ga.

FIELD TECHNICIAN

Position with unusual opportunity for a man with both mechanical inclination and a knowledge of textiles. This is an opportunity for a permanent career with a prime manufacturer of textile finishing machinery.

The work requires considerable travel for a young man not over 30 years of age. College graduate would be preferable.

Replies held confidential.—Box 37, Textile Industries, 806 Peachtree St., Atlanta 8, Ga.

RENEW YOUR SUBSCRIPTION TO TEXTILE INDUSTRIES

Daily inventory report *(from page 96)*

pulls order card from obligation file and key punches invoice number into order card. Inventory cards are removed from inventory file and placed behind order card. Tabulating Department then lists shipping documents.

All of the above reports are balanced to predetermined controls and posted in total to Inventory Control Schedule.

These daily transaction cards are next sorted by stock number and matched against the Inventory and Sales Summary File. The transaction cards are summarized together and balanced. These new summary cards are then merged back into the summary file and Status of Inventory and Sales report listed.

Billing To Be Mechanized. Current plans call for billing and accounts receivable to be done on the data processing equipment as well, which will also be a by-product of what is now a proper punch-card inventory control procedure. It is estimated that 85% of the necessary costs of billing on tabulators has already been saved by scheduling it as a by-product of the inventory, in addition to the elimination of five clerical workers.

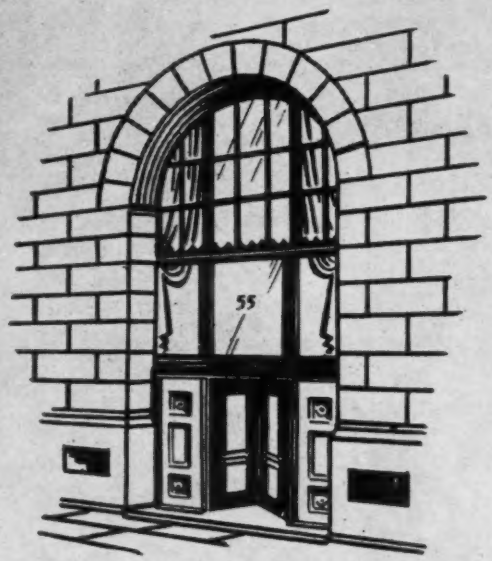
Report Shows How Long Goods Have Been Stored. Age inventories are run once a month to indicate the current age and value of all material in pieces or pounds still being warehoused which are more than three months old. By examining their sales during the past month on each particular style, management receives valuable information and trend guidance on turnover and style acceptance. In this connection, colored ribbons are inserted in every roll, with each color denoting a different manufacturing period (see photos 3 and 4 on pages 94 and 95). The piece goods ticket is attached to the ribbon, so that more rigid control of the last-in first-out problem can be effected from both the warehouse proper and the tabulating department.

Physical Inventories No Longer a Chore. The last physical inventory was taken on a Saturday and was completely checked and reported in detail by the tabulating department on Monday. This is considered to be an unusual feat for a mill of Fulton's size.

Because of these and other additional benefits derived since that time, the inventory system has now gained the complete confidence of management and is being used as a daily operating tool.

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



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55 Madison Avenue, New York 10, N.Y.

Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

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For all the facts call the P&G Textile Representative nearest you. Or, if you prefer, write to Textile Finishes Section, Procter & Gamble, Industrial Specialty Sales Department, Cincinnati 1, Ohio.

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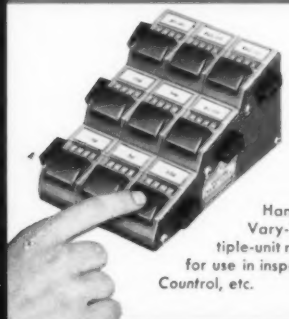
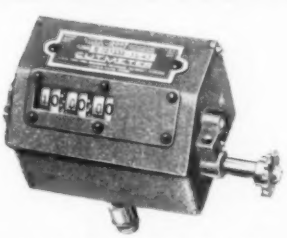


Hand-operated Vary-Tally, a multiple-unit reset counter for use in inspection, stock Countrol, etc.



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